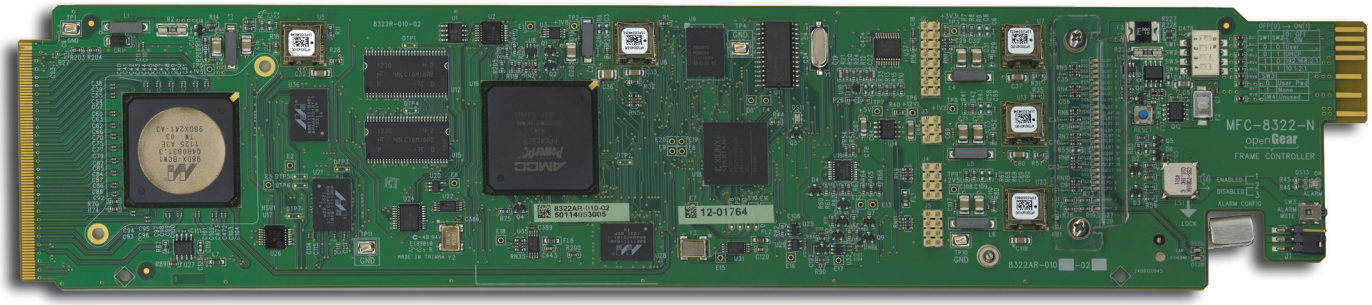
MFC-8300 Series

openGear Controller Cards

User Manual



Video Production Technology

MFC-8300 Series User Manual

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Before using this product and nay associated equipment, refer to the "**Important Safety Instructions**" listed below to avoid personnel injury and to prevent product damage.

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Symbol Meanings

This symbol on the equipment refers you to important operating and maintenance (servicing) instructions within the Product Manual Documentation. Failure to heed this information may present a major risk of damage to persons or equipment.

Warning — *The symbol with the word "**Warning**" within the equipment manual indicates a potentially hazardous situation, which, if not avoided, could result in death or serious injury.*

Caution — *The symbol with the word "**Caution**" within the equipment manual indicates a potentially hazardous situation, which, if not avoided, may result in minor or moderate injury. It may also be used to alert against unsafe practices.*

Notice — *The symbol with the word "**Notice**" within the equipment manual indicates a potentially hazardous situation, which, if not avoided, may result in major or minor equipment damage or a situation which could place the equipment in a non-compliant operating state.*

ESD Susceptibility — *This symbol is used to alert the user that an electrical or electronic device or assembly is susceptible to damage from an ESD event.*

Important Safety Instructions

Caution — *This product is intended to be a component product of the openGear frame. Refer to the DFR-8300 Series and OG3-FR Series Frame User Manual for important safety instructions regarding the proper installation and safe operation of the frame as well as its component products.*

Warning — *Certain parts of this equipment namely the power supply area still present a safety hazard, with the power switch in the OFF position. To avoid electrical shock, disconnect all A/C power cords from the chassis' rear appliance connectors before servicing this area.*

Warning — *Service barriers within this product are intended to protect the operator and service personnel from hazardous voltages. For continued safety, replace all barriers after any servicing.*

This product contains safety critical parts, which if incorrectly replaced may present a risk of fire or electrical shock. Components contained with the product's power supplies and power supply area, are not intended to be customer serviced and should be returned to the factory for repair. To reduce the risk of fire, replacements fuses must be the same time and rating. Only use attachments/accessories specified by the manufacturer.

EMC Notices

United States of America
FCC Part 15

This equipment has been tested and found to comply with the limits for a class A Digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at their own expense.

Notice — *Changes or modifications to this equipment not expressly approved by Ross Video Limited could void the user's authority to operate this equipment.*

CANADA

This Class "A" digital apparatus complies with Canadian ICES-003.

Cet appariel numerique de la classe "A" est conforme a la norme NMB-003 du Canada.

EUROPE

This equipment is in compliance with the essential requirements and other relevant provisions of CE Directive 93/68/EEC.

INTERNATIONAL

This equipment has been tested to **CISPR 22:1997** along with amendments **A1:2000** and **A2:2002**, and found to comply with the limits for a Class A Digital device.

Notice — *This is a Class A product. In domestic environments, this product may cause radio interference, in which case the user may have to take adequate measures.*

Maintenance/User Serviceable Parts

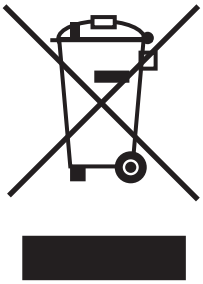
Routine maintenance to this openGear product is not required. This product contains no user serviceable parts. If the module does not appear to be working properly, please contact Technical Support using the numbers listed under the "Contact Us" section on the last page of this manual. All openGear products are covered by a generous 5-year warranty and will be repaired without charge for materials or labor within this period. See the "Warranty and Repair Policy" section in this manual for details.

Environmental Information

The equipment that you purchased required the extraction and use of natural resources for its production. It may contain hazardous substances that could impact health and the environment.

To avoid the potential release of those substances into the environment and to diminish the need for the extraction of natural resources, Ross Video encourages you to use the appropriate take-back systems. These systems will reuse or recycle most of the materials from your end-of-life equipment in an environmentally friendly and health conscious manner.

The crossed out wheelie bin symbol invites you to use these systems.



If you need more information on the collection, re-use, and recycling systems, please contact your local or regional waste administration.

You can also contact Ross Video for more information on the environmental performance of our products.

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Introduction

In This Chapter

This chapter contains the following sections:

- Features
- User Interfaces
- Documentation Terms and Conventions

A Word of Thanks

Congratulations on choosing an openGear MFC-8300 Series Controller Card. Your MFC-8300 Series Controller Card is part of a full line of products within the openGear Terminal Equipment family of products, backed by Ross Video's experience in engineering and design expertise since 1974.

You will be pleased at how easily your new MFC-8300 Series Controller Card fits into your overall working environment. Equally pleasing is the product quality, reliability and functionality. Thank you for joining the group of worldwide satisfied Ross Video customers!

Should you have a question pertaining to the installation or operation of your MFC-8300 Series Controller Card, please contact us at the numbers listed on the back cover of this manual. Our technical support staff is always available for consultation, training, or service.

Features

The MFC-8300 Series Controller Cards are designed for the openGear frames and offer a range of monitoring and control options based on the card model. The following sections outline the features for each available MFC-8300 Series Controller Card offered by Ross Video.

MFC-8322 Series

This section outlines the features for the MFC-8322 series cards. The MFC-8322 series cards are designed for use in the OG3-FR series frames only.

Table 1.1 Feature Comparison Chart

Features	MFC-8322 Series Model		
	8322-S	8322-N	8322-NS
Compatible with the DFR-8310 series frames			
Compatible with the DFR-8321 series frames			
Compatible with the OG3-FR series frames	✓	✓	✓
Monitors frame power usage, the inlet ambient temperature, the airflow requirements of high-powered cards, and sets the fan speed accordingly[a]	✓	✓	✓
Monitors the frame door and each frame power supply	✓	✓	✓
Monitors the fan door and notifies the user if the door is left open too long	✓	✓	✓
Monitors the status of other cards in the frame via the internal bus	✓	✓	✓
Supports the DataSafe™ feature in DashBoard		✓	✓
Generates alarms if any of the monitored functions develop errors	✓	✓	✓
Network settings[b] storage location	On the GFC-8322 Reference card		
Provides SNMP Monitoring			✓
Provides external 10/100Mbps ethernet connectivity to communicate with DashBoard	✓	✓	✓
Provides external 1000Mbps ethernet connectivity to communicate with DashBoard		✓	✓
Provides internal 1000BASE-X Ethernet links to all 20 slots for high speed communication between cards		✓	✓
Supports more than one concurrent TCP Control connections, such as DashBoard, or a control panel		✓	✓
5-year transferable warranty	✓	✓	✓

a. Higher power consumption requires higher fan speed for adequate cooling. The fans always run at maximum speed for 5 seconds after the fan door is closed, then adjust to the appropriate level based on power consumption and the inlet ambient temperature.

b. Saves items configured on the Network tab plus the Frame Name.

MFC-8320 Series

This section outlines the features for the MFC-8320 series cards.

Table 1.2 Feature Comparison Chart

Features	MFC-8320 Series Model		
	8320-S	8320-N	8320-NS
Compatible with the DFR-8310 series frames	✓	✓	✓
Compatible with the DFR-8321 series frames	✓	✓	✓
Compatible with the OG3-FR series frames			
Monitors frame power usage and sets the fan speed accordingly[a]	✓	✓	✓
Monitors the frame door and each frame power supply	✓	✓	✓
Monitors the fan door and notifies the user if the door is left open too long	✓	✓	✓
Monitors the status of other cards in the frame via the internal bus	✓	✓	✓
Supports the DataSafe™ feature in DashBoard		✓	✓
Generates alarms if any of the monitored functions develop errors	✓	✓	✓
Network settings[b] storage location	On the frame midplane		
Provides SNMP Monitoring			✓
Provides external 10/100Mbps ethernet connectivity to communicate with DashBoard	✓[c]	✓	✓
Supports more than one concurrent TCP Control connections, such as DashBoard, or a control panel		✓	✓
5-year transferable warranty	✓	✓	✓

a. Higher power consumption requires higher fan speed for adequate cooling. The fans always run at maximum speed for 5 seconds after the fan door is closed, then adjust to the appropriate level based on power consumption.

b. Saves items configured on the Network tab plus the Frame Name.

c. Not available when the MFC-8320-S is installed in an DFR-8310 series frame.

MFC-8310 Series

This section outlines the features for the MFC-8310 series cards.

Table 1.3 Feature Comparison Chart

Features	MFC-8310 Series Model		
	8310	8310-N	8310-NS
Compatible with the DFR-8310 series frames	✓	✓	✓
Compatible with the DFR-8321 series frames	✓	✓	✓
Compatible with the OG3-FR series frames			
Monitors frame power usage and sets the fan speed accordingly[a]	✓	✓	✓
Monitors the frame door and each frame power supply	✓	✓	✓
Monitors the fan door and notifies the user if the door is left open too long	✓	✓	✓
Monitors the status of other cards in the frame via the internal bus	✓	✓	✓
Supports the DataSafe™ feature in DashBoard		✓	✓
Generates alarms if any of the monitored functions develop errors	✓	✓	✓
Network settings[b] storage location	N/A[c]	✓	✓
Provides SNMP Monitoring			✓
Provides external 10/100Mbps ethernet connectivity to communicate with DashBoard		✓	✓
Supports more than one concurrent TCP Control connections, such as DashBoard, or a control panel		✓	✓
5-year transferable warranty	✓	✓	✓

a. Higher power consumption requires higher fan speed for adequate cooling. The fans always run at maximum speed for 5 seconds after the fan door is closed, then adjust to the appropriate level based on power consumption.
b. Saves items configured on the Network tab plus the Frame Name.
c. The Network tab is unavailable for this card.

User Interfaces

Your MFC-8300 Series Controller Card may include the following interfaces.

DashBoard Control System™

The DashBoard Control System™ enables you to monitor and control openGear frames and cards from a computer. DashBoard communicates with other cards in the openGear frames through the MFC-8300 Series Network Controller cards. The DashBoard software and user manual are available for download from our website.

For More Information on...

- installing and using DashBoard, refer to the ***DashBoard User Manual***.
- the available menus in DashBoard for your card, refer to the chapter "**DashBoard Menus**" on page 10-1.

Card-edge Controls

The front-edge of the MFC-8300 Series Controller Card feature LED indicators for the power, ethernet connection, and general communication activity. The MFC-8300 Series Network Controller cards also include DIP switches for specifying the IP address of the frame.

For More Information on...

- the specific front-edge controls for your MFC-8300 Series Controller Card, refer to the applicable chapter in this manual.

SNMP Monitoring and Control

The MFC-8300 Series Network Controller cards can provide optional support for remote monitoring of your openGear frame and using the Simple Network Management Protocol (SNMP). This protocol is compatible with many third-party monitoring and control tools.

For More Information on...

- SNMP monitoring and control, refer to the section "**Enabling SNMP Support**" on page 2-10.
- SNMP controls for your openGear card, refer to the Management Information Base (MIB) file for your card.

Documentation Terms and Conventions

This section outlines the terms and conventions used throughout this manual.

Terms

The following terms are used:

- "**Board**", and "**Card**" refer to openGear terminal devices within openGear frames, including all components and switches.
- "**DashBoard**" refers to the DashBoard Control System™.
- "**DFR-8300 series frame**" refers to all versions of the DFR-8310 series and DFR-8321 series frames and any available options unless otherwise noted.
- "**DFR-8310 series frames**" refers to all versions of the DFR-8310 frame unless otherwise noted.
- "**DFR-8321 series frames**" refers to all versions of the DFR-8321 series frames unless otherwise noted.
- "**MFC-8300 Series Controller Card**" refers to the MFC-8310 series, the MFC-8320-S, and the MFC-8320-N series unless otherwise noted.
- "**MFC-8300 Series Network Controller Card**" refers to the MFC-8310-N, the MFC-8310-NS, the MFC-8320-N, the MFC-8320-NS, the MFC-8322-N, and the MFC-8322-NS unless otherwise noted.
- "**MFC-8310-N**" refers to the MFC-8310-N and MFC-8310-NS unless otherwise noted.
- "**MFC-832#-x**" refers to the MFC-8322-N, MFC-8322-S, MFC-8320-N, and MFC-8320-S unless otherwise noted.
- "**MFC-8320-N**" refers to the MFC-8320-N and MFC-8320-NS unless otherwise noted.
- "**MFC-8322-N**" refers to MFC-8322-N and MFC-8322-NS unless otherwise noted.
- "**OG3-FR series frames**" refers to all versions of the OG3-FR series frames unless otherwise noted.
- "**openGear Frame**" refers to the DFR-8300 series and OG3-FR series frames.
- "**Operator**" and "**User**" refer to the person who uses the MFC-8300 Series Controller Card.
- "**System**" and "**Video system**" refer to the mix of interconnected production and terminal equipment in your environment.

Conventions

The following conventions are used:

- "**Operating Tips**" and "**Note**" boxes are used throughout this manual to provide additional user information.

Installation

In This Chapter

This chapter provides instructions for installing the MFC-8300 Series Controller Card, configuring the network settings, and enabling the SNMP monitoring option.

The following topics are discussed:

- Before You Begin
- Installing an MFC-8300 Series Controller Card
- Network Configuration
- Using a Master Password
- Enabling SNMP Support
- Software Upgrades

Before You Begin

Before you begin, ensure to read the following sections.

Static Discharge

Throughout this chapter, please heed the following cautionary note:

ESD Susceptibility — *Static discharge can cause serious damage to sensitive semiconductor devices. Avoid handling circuit boards in high static environments such as carpeted areas and when synthetic fiber clothing is worn. Always exercise proper grounding precautions when working on circuit boards and related equipment.*

Unpacking

Unpack each MFC-8300 Series Controller Card you received from the shipping container. If any items are missing or damaged, contact your sales representative or Ross Video directly.

Related Publications

It is recommended to consult the following Ross Video documentation before installing and configuring your MFC-8300 Series Controller Card:

- ***DashBoard User Manual***, Ross Part Number: 8351DR-004
- ***DFR-8300 and OG3-FR Series User Manual***, Ross Part Number: 8300DR-005

Installing an MFC-8300 Series Controller Card

This section outlines how to install an MFC-8300 Controller Card in an openGear frame. The same procedure applies regardless of the frame or card type. The MFC-8300 series controller card installs in the last slot on the right side of the openGear frame (when facing the frame).

Caution — *You must install the MFC-8322-S and the MFC-8322-N into an OG3-FR series frame. Attempting to install these cards in another frame type can damage your card.*

To install an MFC-8300 Series Controller Card

1. Power off the openGear frame.
2. Open the frame door.
3. If necessary, remove any cards from the frame that would interfere with easy access and lines of sight.
4. If you are installing an MFC-8310 series or MFC-8320 series card, unscrew the Card Retaining Screw (Part No. 850-040R) enough to eliminate any protrusion into the card guide slot on the right of the screw.
5. If you are installing an MFC-8322 series card, lift the lock before inserting the card into its slot. (**Figure 2.1**)

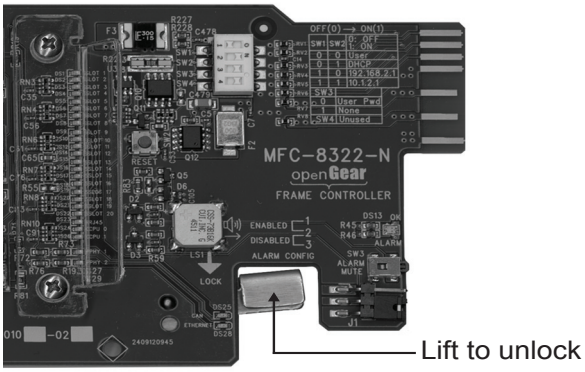

Figure 2.1 *MFC-8322 Series Card — Lock*

6. Insert the MFC-8300 Controller Card, with the component side out into the card guides between the dividing wall and the last slot, ensuring the card does not touch the Card Retaining Screw.
7. If you are installing an MFC-8310 series or MFC-8320 series card:
   - Slide the card in the slot until firmly seated and such that the Card Retaining Screw hole on the bottom front edge aligns with the mounted nut beside the bottom guide slot. (**Figure 2.2**)
   - Tighten the Card Retaining Screw through the Retaining Screw hole, to ensure the card does not move from the slot.

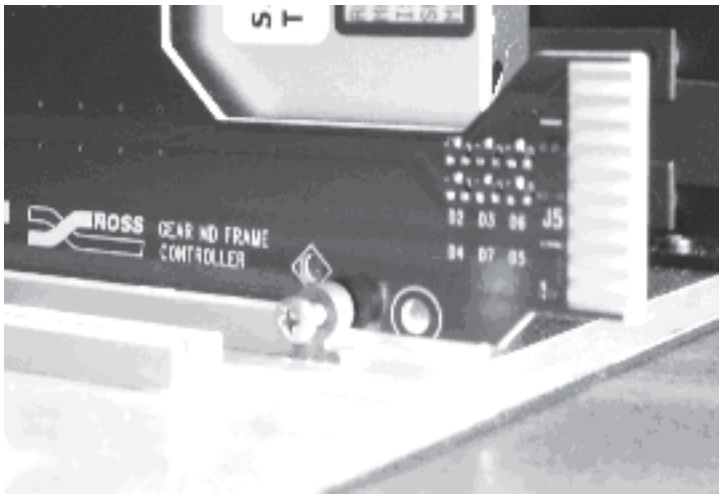

Figure 2.2 *MFC-8310 Controller Card and Unscrewed Retaining Screw*

8. If you are installing an MFC-8322 series card:
   - Slide the card in the slot until firmly seated.
   - Ensure the lock on the front edge of the card is engaged in the down position.
9. Power up the frame.
10. Close the frame door.
11. Check the operation of the fans. If the fans do not operate, verify that:
    - the MFC-8300 Controller Card is seated properly in the frame backplane.
    - the MFC-8300 Controller Card is aligned to the Fan PCB when the door is closed.

Network Configuration

The **MFC-8300 Series Network Controller Cards** feature an ethernet interface which allows cards in the openGear frame to be monitored and controlled using the DashBoard Control System™. Communication is possible only when the MFC-8300 Series Network Controller card is suitably configured to match the network to which it is connected.

Note — *Consult your IT Department before configuring any network settings.*

This section explains the necessary parameters and lists several possible methods for managing these parameters.

- **Automatic configuration using DHCP** — When shipped from the factory, the Network Controller card is configured to automatically obtain network settings from a Dynamic Host Configuration Protocol (DHCP) server. Since most networks have a DHCP server available, this method is applicable to most users and is the recommended method.
- **Preset configuration using DIP switch(es)** — The Network Controller card can be forced to use specific pre-defined network settings by means of DIP switches located on the card surface. This can be used to establish initial communications when no DHCP server is available, or to override a custom user configuration.
- **Custom user configuration via DashBoard** — Using the network setting options available in the DashBoard Control System, you may configure the Network Controller card to use a static address or enable DHCP for automatic configuration. This can only be done once communication has been established.

Important — *Before proceeding, ensure that the DashBoard Control System software is installed on your computer.*

Automatic Configuration using DHCP

This method assumes that the MFC-8300 Series Network Controller card is using the factory default values for the network settings.

Note — *The MFC-8300 Series Network Controller card boots much faster than a typical DHCP server. In the case of a facility-wide power failure, the Network Controller card may not appear on the network if communications with the DHCP server cannot be established. Once the DHCP server becomes operational, re-boot the MFC-8300 Series Network Controller card to re-establish communications. To avoid this, you may use a static configuration as described in the section "**Custom User Configuration via DashBoard**" on page 2-7.*

To establish communications with the Network Controller card

1. Ensure that openGear frame is connected to the same network as your DashBoard computer.
2. Launch the DashBoard application on your computer.
3. Power on the openGear frame that the Network Controller card is installed in.
4. Wait approximately 30 seconds while the frame establishes network communications.
5. Verify that the Network Controller card displays in the Tree View of DashBoard.

6. Should the card fail to display after two minutes:
   - Verify the ethernet cables are properly connected.
   - Check the link/activity LEDs found on the ethernet RJ-45 connectors.
   - Ensure the network settings for the Network Controller card are set to the factory default values.
   - If all cables are connected and the LEDs do not indicate an error, then automatic configuration is not possible. Proceed to the section "**Preset Configuration using DIP Switches**" on page 2-6.

Preset Configuration using DIP Switches

This method is used to established initial communications when no DHCP server is available, or to override a custom user configuration and is intended to be used temporarily in order to establish communication. Once initial communications are established, the Network Controller card should be configured for either DHCP or Static operation.

Note — *Use of this method for normal operation is not recommended, as there is a high chance of IP Address conflicts.*

To use a preset network configuration using the DIP Switch(es)

1. Power down the openGear frame that houses the Network Controller card.
2. Quit DashBoard on your computer.
3. Set the DIP Switch to specify the preset IP Address as outlined in the applicable Setup chapter of this manual for your Network Controller card model.
4. Ensure the network settings of your computer are compatible with those chosen for the Network Controller card.

Note — *The IP Addresses of the Network Controller card and your computer must be similar, but not identical, and the Subnet Mask must match exactly the same. For example, if the Network Controller card has an IP Address of 192.168.2.1, then your computer should be configured for an IP Address with 192.168.2.X where X is a number other than 1.*

5. Before you begin, and to prevent IP Address conflicts, isolate the Network Controller card and your DashBoard computer from the rest of your network.
   - If you are using a hub or switch, unplug all devices except the Network Controller card and your DashBoard computer; or
   - Connect the openGear frame directly to the DashBoard computer.

Note — *The MFC-8310-N does not support Auto-MDIX, so a crossover cable may be needed for direct connection.*

The MFC-8322-S, MFC-8322-N, MFC-8320-S and MFC-8320-N support Auto-MDIX, enabling you to use any ethernet cable when connecting the frame to the DashBoard computer.

6. Launch DashBoard on your computer.
7. Power up the openGear frame.
8. Wait approximately 30 seconds while the frame establishes network communications.
9. Verify that the Network Controller card displays in the Tree View of DashBoard.

10. Should the card fail to display after a minute or two:
    - Verify the ethernet cables are properly connected.
    - Check the link/activity LEDs found on the ethernet RJ-45 connectors.
    - Verify that you have properly performed each step of this procedure.
    - Contact Ross Video Technical Support if you cannot establish a connection.

Custom User Configuration via DashBoard

Once communication has been establish with the Network Controller card, the network settings may be further adjusted using the following procedure. Note that the steps are optional, you may perform as many, or as few, as needed.

Operating Tip — *Some settings may require that you configure a DIP Switch before proceeding. Refer to the section "**Card-edge Controls for the MFC-8320-S**" on page 5-2, "**Card-edge Controls for the MFC-8320-N**" on page 6-2, or "**Configuring the DIP Switches**" on page 8-3 for configuration details.*

To configure the network settings via DashBoard

1. In DashBoard, display the **Device** tab of the Network Controller card by double-clicking its status indicator in the **Basic Tree View**.
2. From the **Device** tab, select the **Network** tab.
3. To change the display name of the frame, enter a new name in the **Frame Name** field.
4. To change the **Network Time Server** address, enter the new IP Address in the **NTP Server** field.
5. To change between **Static** and **DHCP** addressing, select an option in the **Addressing Mode** area.
6. Configure the network settings as required:
    - **IP Address** — This is the IP Address of the Network Controller card.
    - **Subnet Mask** — This is the Subnet Mask address for your LAN.
    - **Default Gateway** — This is the IP Address for connection outside the subnet.
7. To save the new settings, click **Apply** in the **Network** tab. The settings are saved immediately and take effect except when overridden by DIP Switch settings.Clicking **Cancel** reverts to the previous settings.

User Rights Management

If your facility has installed and configured the DashBoard Server and URM feature, you may need to enter a URM user name and password to access the frame and any of the devices installed in the frame. For details on configuring and using the DashBoard Server and URM feature, refer to the ***DashBoard Server and URM User Manual***.

Using a Master Password

Right-clicking an openGear frame node in the tree view of DashBoard provides the option to **Lock/Unlock Access** which requires the user to enter a Master Password before gaining access to the frame and the cards installed in it. This Master Password can be the same for all frames listed in the DashBoard client, or unique to each frame, or a mix.

When using the DashBoard Server and URM, openGear frame nodes in the Tree View display a lock icon to inform the user that restrictions are in place. This lock icon indicates that the node is locked and requires a Master Password, or that the user must log into the DashBoard client with a valid user account, to gain access to the node.

For More Information on...

- the lock icon, refer to the ***DashBoard Server and URM User Manual***.

Before You Begin

Refer to **Table 2.1** to verify that you are running the required DashBoard and card software versions. Note that at time of writing, the current version of DashBoard is 5.1.

Table 2.1 Required Software Versions

Card Model	DashBoard Version	Card Software Version
MFC-8322-S	4.0.0 or higher	2.00 or higher
MFC-8322-N	4.0.0 or higher	2.75 or higher
MFC-8320-S	4.0.0 or higher	1.10 or higher
MFC-8320-N	4.0.0 or higher	2.50 or higher
MFC-8310-N	4.0.0 or higher	2.50 or higher

Configuring the Master Password

Configuring the Master Password for your frame requires configuring the password feature in DashBoard.

Setting the DIP Switch

Your MFC-8300 Series Network Controller card includes a DIP Switch that enables you to override the Master Password.

- **MFC-8322-S** and **MFC-8322-N** — Use **SW3** to configure the Master Password.
- **MFC-8320-S** and **MFC-8320-N** — Use **SW3** to configure the Master Password.
- **MFC-8310-N** — Use **SW7** to configure the Master Password.

Use this DIP switch when the Master Password needs to be reset (e.g. when you have forgotten the password text). If you change the configuration of the DIP Switch, you must reboot the card before the changes take effect.

Override the Master Password using the DIP Switch as follows:

- **OFF** — This is the recommended position. A user-specified Master Password is used.The default password is `password`. It can be changed using DashBoard as outlined in the section "**To configure the Master Password in DashBoard**" on page 2-9.
- **ON** — This position is used to recover a lost Master Password. The user-specified password is temporarily ignored, and the default value of password is used.

To configure the Master Password in DashBoard

1. Navigate to the frame in the Tree View of the DashBoard client.
2. Right-click the frame node and select **Lock/Unlock Access** to display the **Change Master Password** dialog. By default, the current Master Password for the frame is automatically entered into the **Old Password** field.
3. Select the **Change master password** check box.
4. Type the new Master Password for the frame in the **New Password** field.
5. Re-type the new Master Password for the frame in the **Confirm** field.
6. Select the **Prevent unauthorized access to this frame** check box to enforce access controls for this frame.
   - Users with older version of DashBoard will be unable to connect to the frame.
   - DashBoard clients version 4.0.0 or higher will use DashBoard URM to determine user access rights.
7. From the dialog window located under the **Confirm** field, select the frame(s) you wish to apply the new Master Password to. Or you can use the provided menu to quickly select all frames, clear the selections, select only presently locked frames, or select only currently unlocked frames.
8. Click **OK**.

Accessing an MFC-8300 Series Network Controller Card

You can access an MFC-8300 Series Controller Card using your user account, assuming you have permissions to do so. If DashBoard URM is implemented in your facility and your DashBoard client is version 4.0.0 or higher, you log in as outlined in the procedure "**To use a valid user account**". If DashBoard URM is unavailable, or when using the DashBoard Lite applet, you log in as outlined in the procedure "**To use the Master Password**".

To use a valid user account

1. Launch the DashBoard client on your computer.
2. Log into the DashBoard client with your user account and password.
3. Navigate to the frame in the Tree View of the DashBoard client.

To use the Master Password

1. Launch the DashBoard client on your computer.
2. Navigate to a locked frame displayed in the Tree View of the DashBoard client.
3. Double-click the frame node to display the **Password Required** dialog. You can also double-click the frame name and select **Open**.
4. Enter the Master Password for the frame in the provided field.
5. Select one of the following methods:
   - Click **Try Password** to connect to the selected frame; or
   - Click **Try for All** to connect to all locked frames displayed in the Tree View. Only when you attempt to connect to additional locked frames and the login fails, are you prompted for the password.
6. If the password was incorrect, an error message displays to prompt you for another log in attempt.

Enabling SNMP Support

Certain versions of the MFC-8300 Series Controller Cards provide optional support for remote monitoring and control of your frame and openGear cards using SNMP (Simple Network Management Protocol), which is compatible with many third-party monitoring and control tools. Refer to the section "**Features**" on page 1-2 for a list of cards that support SNMP.

Note — *The MFC-8322-S and MFC-8320-S do not support SNMP.*

Enabling SNMP Support

The SNMP monitoring and control feature for your MFC-8300 Series Controller Card is a software option that is field upgradable using DashBoard.

Note — *If SNMP is enabled on an MFC-8320-N, it will perform as an MFC-8320-NS although DashBoard and SNMP still display MFC-8320-N. Likewise with the MFC-8322-N. An MFC-8310-N with SNMP enabled will continue to display in DashBoard as MFC-8310-N as well.*

To enable SNMP support using the SNMP tab in DashBoard

1. Ensure that you have configured the network settings for your card as outlined in the section "**Network Configuration**" on page 2-5.
2. In DashBoard, display the **Device** tab of the card by double-clicking its status indicator in the **Basic Tree View**.
3. From the **Device** tab, select the **Setup** tab.
4. In the **Licensable Features** area, make a note of the information displayed in the **SNMP Request Code** field.
5. Contact Ross Video Technical Support.
   - When you speak to the Technical Support representative, tell them your name, your facility name, and the **SNMP Request Code** displayed in the **Setup** tab.
   - You will be given a **License Key** that must be entered in the **SNMP Feature Key** field of the **Setup** tab.
6. Enter the **License Key** in the **SNMP Feature Key** field.
7. When the installation is complete, verify that the **Setup** tab displays "**Licensed**" in the **SNMP Feature** field and that the **SNMP** tab is now available in the **Device View**.

Configuring the SNMP Agent using DashBoard

The SNMP agent on the frame will accept SNMP GET and SET requests on the default SNMP port (161), using SNMP version 1 or SNMP version 2c. The SNMP Agent will send SNMP traps to one or more notification targets, with user-configurable address, port, and protocol version number.

To configure your SNMP Agent via DashBoard

1. In DashBoard, display the **Device** tab of the card by double-clicking its status indicator in the **Basic Tree View**.
2. From the **Device** tab, select the **SNMP** tab.
3. Set the required parameters as follows:
   - **Read Community String** — Enter the SNMP password for **GET** requests. For example, **public**.
   - **Write Community String** — Enter the SNMP password for **SET** requests. For example, **private**.
4. To add a trap/notification target, edit the **Trap/Notification Target** field. This field follows the format of **##.#.#.##/aaa;bb;cc** where:
   - **##.#.#.##** represents the **Target IP address** to which traps should be sent.
   - **aaa** represents the **UDP Port number** to which traps should be sent.
   - **bb** represents the **SNMP protocol version** to be used for traps to this target.
   - **cc** represents the **Target community string**.

   An example is provided in the **SNMP** tab in DashBoard.
5. Click **Add** to update the list with the new target.
6. Click **Apply** to apply your changes or **Cancel** to discard the changes. To remove a trap/notification target, select the target in the list, and click **Delete**.

Software Upgrades

The MFC-8300 Series Controller Card can be upgraded in the field from DashBoard (via TCP/IP). For MFC-8320-N software versions 2.20 and later, upgrades can also be done using the DashBoard Lite applet. Refer to the section "**Uploading Software to a Card**" on page 11-7 for details on using the DashBoard Lite applet.

Note — *If you are using an MFC-8320-N, contact Ross Technical Support if you are upgrading from a software version of version 1.11 or lower. You must upgrade to version 1.12 before upgrading to a version higher than version 1.12.*

To upgrade the software on a MFC-8300 Series Controller Card

1. Contact Ross Technical Support for the latest software version file.
2. In DashBoard, display the **Device** tab of the MFC-8300 Series Controller Card by double-clicking its status indicator in the **Basic Tree View**.
3. From the **Device** tab, click **Upload** to display the **Select file for upload** dialog.
4. Navigate to the *.bin upload file you want to upload to the MFC-8300 Series Controller Card.
5. Click **Open** to display a confirmation dialog.
6. If you are upgrading a single card, click **Finish** to display the **Uploading to Selected Devices** dialog. Proceed to step 8.
7. If you are upgrading multiple cards:
   - Click **Next >** to display the **Select Destination** menu. This menu provides a list of the compatible cards based on the card selected in step 2.
   - Specify the card(s) to upload the file to by selecting the check box(es) for the cards you wish to upload the file to.
   - Verify that the card(s) you wish to upload the file to. The **Error/Warning** fields indicate any errors, such as incompatible software or card type mismatch.
   - Click **Finish** to display the **Uploading to Selected Devices** dialog.
   - Proceed to step 8.
8. Monitor the upgrade.
   - The **Uploading to Selected Devices** dialog enables you to monitor the upgrade process.
   - Notice that each card is listed in the dialog with a button. This button is replaced with a **Reboot** button once the software file is loaded to that card.

Important — *Avoid clicking the individual **Reboot** buttons until all cards have successfully completed the file upload process and the **OK** button, located in the bottom right corner of the dialog, is enabled.*

   - Click **OK** to reboot all the cards listed in the **Uploading to Selected Devices** dialog.
   - The **Reboot Confirm** dialog displays, indicating the number of cards that will reboot. Click **Yes** to continue the upgrade process. Note that clicking **Cancel** or **No** returns you to the **Uploading to Selected Devices** dialog without rebooting the card(s).

Note — *The communications processor of the MFC-8300 Series Controller Card requires approximately 30 seconds to re-start and re-establish network communications.*

- The card(s) are temporarily taken offline during the reboot process. The process is complete once the status indicators for the **Card State** and **Connection** return to their previous status.

Troubleshooting

If you encounter problems when upgrading your card software, verify the following:

- Your network settings on the card are valid.
- The ethernet cable is properly connected if you are uploading the file via a network connection.
- The file you are attempting to load is a ***.bin** file that is for the card you are upgrading.

MFC-8322-S Setup

In This Chapter

This chapter provides information on setting up and using the card-edge controls of the MFC-8322-S Controller Card.

Caution — *You must install the MFC-8322-S into an OG3-FR series frame. Attempting to install the MFC-8322-S in another frame type can damage your card.*

The following topics are discussed:

- Card-edge Controls for the MFC-8322-S
- Configuring the DIP Switches
- Monitoring the MFC-8322-S

Card-edge Controls for the MFC-8322-S

This section provides information on the jumpers, buttons and LEDs for the MFC-8322-S. Refer to **Figure 3.1** for the location of card control features such as the **Alarm Mute** button, and the **Alarm Config** jumpers.

Note — *The MFC-8322-S provides a single DashBoard connection.*

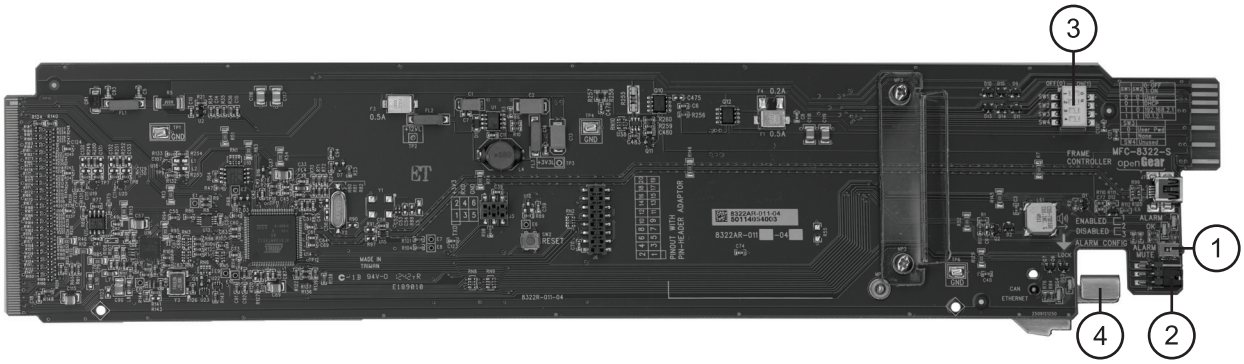

Figure 3.1 *MFC-8322-S Card Controls*

1) Alarm Mute Button	3) DIP Switches
2) Alarm Config Jumper	4) Card Lock

1. Alarm Mute Button

The **Alarm Mute** button on the card-edge of the MFC-8322-S mutes the audio alarm for two minutes. If a fault condition is still present when the mute time-out ends, the card re-activates the audio alarm.

2. Alarm Config Jumper

The **Alarm Config** jumper enables or disables the audio alarm signal. The **ALARM** LED is still lit if alarm conditions are occurring, but the audio will be off. Refer to **Figure 3.2** and the card labeling for jumper positions.

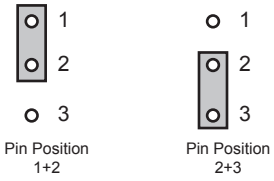

Figure 3.2 *Alarm Config Jumper — Pin Positions*

- **Enabled** — To enable the alarm feature, set the jumper into **Position 1+2**.
- **Disabled** — To disable the alarm feature, set the jumper into **Position 2+3**.

3. DIP Switches

SW1 and **SW2** are used in conjunction with the DashBoard menus to set the IP Address of the MFC-8322-S. Refer to the section "**Configuring the DIP Switches**" on page 3-3 for details.

SW3 is used to override the Master Password for the MFC-8300 card. This password limits access to the card, and the cards installed in the frame.

4. Card Lock

This lock located near the front edge of the card is used to secure the card in its frame slot.

Configuring the DIP Switches

This section briefly summarizes the **DIP Switch** settings on the MFC-8322-S. **Figure 3.3** shows the DIP Switches in the **ON** position.

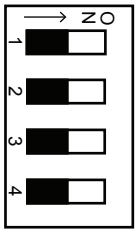

***Figure 3.3** DIP Switches — Set to the ON Positions*

SW1, SW2 — IP Address Setup

SW1 and **SW2** are used in conjunction with the DashBoard menus to set the IP Address of the MFC-8322-S. Refer to **Table 3.1** for DIP Switch positions. For information on configuring the network settings for your card, refer to the section "**Network Configuration**" on page 2-5.

Table 3.1 SW1 and SW2 Positions

SW1 Position	SW2 Position	Controlled via DashBoard	Descriptions
OFF	**OFF**	✓	The card network settings can be set by the user from the DashBoard **Network** tab[a]. (default)
OFF	**ON**		The card network settings are automatically assigned (DHCP Mode).
ON	**OFF**		The card IP Address is set to 192.168.2.1 The card Subnet Mask is set to 255.255.255.0.
ON	**ON**		The card IP Address is set to 10.1.2.1. The card Subnet Mask is set to 255.255.255.0.

a. DHCP Mode is assumed until the user changes the settings in DashBoard.

SW3 — Master Password Override

SW3 is used to override the Master Password. This feature forces a reset of the Master Password. Refer to the section "**Using a Master Password**" on page 2-8 for details.

- **OFF** — This is the recommended position. A user-specified Master Password is used. The default password is **`password`**. It can be changed using DashBoard as outlined in the section "**Using a Master Password**" on page 2-8.
- **ON** — This position is used to recover a lost Master Password. The user-specified password is temporarily ignored, and the default value of **`password`** is used.

SW4

SW4 is not implemented at this time and should be left in the **OFF** position.

Monitoring the MFC-8322-S

The front card-edge of the MFC-8322-S has LED indicators for the cooling module fan, alarm, and communication activity. Refer to **Figure 3.4** for the location of the card-edge LEDs on the MFC-8322-S.

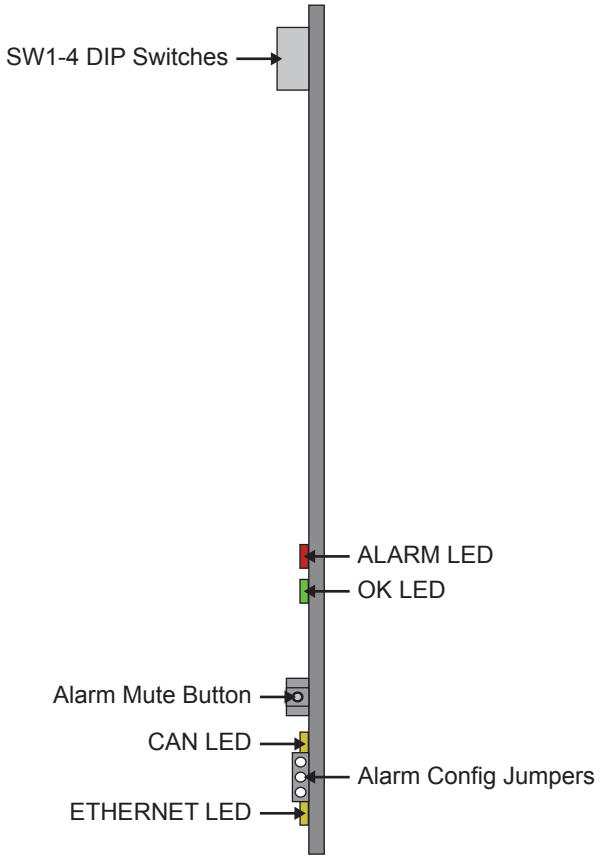

***Figure 3.4** MFC-8322-S Card-edge Controls*

Table 3.2 provides information on the LED displays of the MFC-8322-S.

Table 3.2 MFC-8322-S LED Descriptions

LED	Color	Description
OK	Red	When lit, this LED indicates a major alarm condition is occurring in the frame.
ALARM	Green	When lit, this LED indicates the MFC-8322-S is operating correctly.
CAN	Flashing Yellow	When flashing, this LED indicates the MFC-8322-S is communicating with the other cards within the frame.
	Off	When off, this LED indicates an absence of incoming messages.
Ethernet	Yellow[a]	When lit, this LED indicates a valid ethernet link has been established. No data transfer is currently taking place.
	Flashing Yellow	When flashing, this LED indicates that a valid link has been established, and data is currently being exchanged.
	Off	When off, this LED indicates an absence of ethernet connection.

a. If this LED remains lit for an extended period of time (e.g. minutes or more), ensure that the Ethernet port on the frame is connected to a functioning ethernet switch.

MFC-8322-N Series Setup

In This Chapter

This chapter provides information on setting up and using the card-edge controls of the MFC-8322-N and MFC-8322-NS Controller Cards. The MFC-8322-N and MFC-8322-NS bring GigE ethernet connectivity to the OG3-FR frames infrastructure, providing a DashBoard interface to monitor openGear cards in the frame. The MFC-8322-NS includes the SNMP Monitoring option.

Caution — *You must install the MFC-8322-N and MFC-8322-NS into an OG3-FR series frame. Attempting to install the MFC-8322-N or MFC-8322-NS in another frame type can damage your card.*

The following topics are discussed:

- Card-edge Controls for the MFC-8322-N
- Configuring the DIP Switches
- Monitoring the MFC-8322-N

Card-edge Controls for the MFC-8322-N

This section provides information on the jumpers, buttons and LEDs for the MFC-8322-N and MFC-8322-NS. Refer to **Figure 4.1** for the location of card control features such as the **Alarm Mute** button, and the **Alarm Config** jumpers.

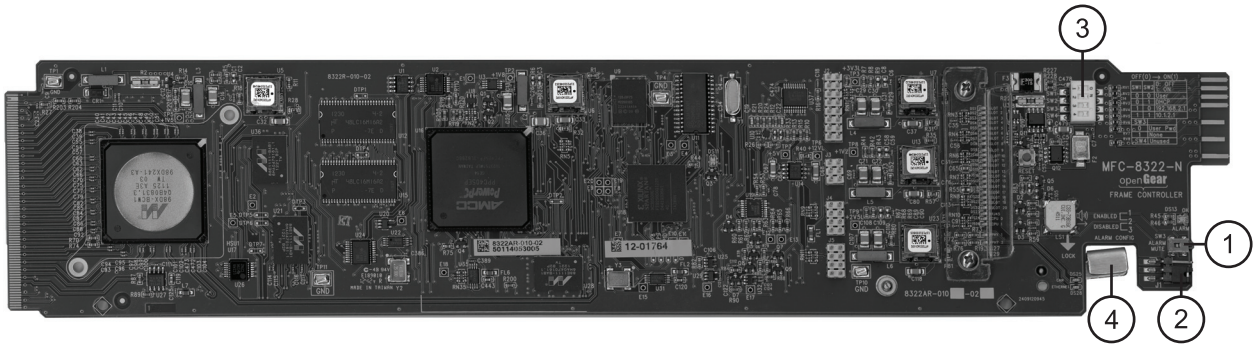

***Figure 4.1** MFC-8322-N — Card Control Locations*

1) Alarm Mute Button	3) DIP Switches
2) Alarm Config Jumper	4) Card Lock

1. Alarm Mute Button

The **Alarm Mute** button on the card-edge mutes the audio alarm for two minutes. If a fault condition is still present when the mute time-out ends, the card re-activates the audio alarm.

2. Alarm Config Jumper

The **Alarm Config** jumper enables or disables the audio alarm signal. The **ALARM** LED is still lit if alarm conditions are occurring, but the audio will be off. Refer to **Figure 4.2** and the card labeling for jumper positions.

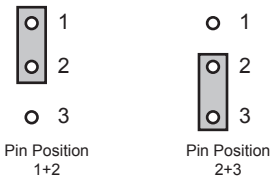

***Figure 4.2** Alarm Config Jumper — Pin Positions*

- **Enabled** — To enable the alarm feature, set the jumper into **Position 1+2**.
- **Disabled** — To disable the alarm feature, set the jumper into **Position 2+3**.

3. DIP Switches

SW1 and **SW2** are used in conjunction with the DashBoard menus to set the IP Address of the card. Refer to the section "**SW1, SW2 — IP Address Setup**" on page 4-3 for details.

SW3 is used to override the Master Password for the frame. Refer to the section "**SW3 — Master Password Override**" on page 4-3 for details.

4. Card Lock

This lock located near the front edge of the card is used to secure the card in its frame slot.

Configuring the DIP Switches

This section briefly summarizes the **DIP Switch** settings on the card. Refer to **Figure 4.1** for the locations. Note that **Figure 4.3** shows the DIP Switches in the **ON** position.

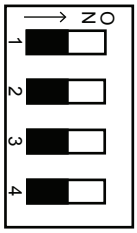

***Figure 4.3** DIP Switches — Set to the ON Positions*

SW1, SW2 — IP Address Setup

SW1 and **SW2** are used in conjunction with the DashBoard menus to set the IP Address of the card. Refer to **Table 4.1** and the card labeling for DIP Switch positions. For more information on configuring the network settings for your card, refer to the section "**Network Configuration**" on page 2-5.

Table 4.1 SW1 and SW2 Positions

SW1 Position	SW2 Position	Controlled via DashBoard	Descriptions
OFF	**OFF**	✓	The card network settings can be set by the user from the DashBoard **Network** tab[a]. (default)
OFF	**ON**		The card network settings are automatically assigned (DHCP Mode).
ON	**OFF**		The card IP Address is set to 192.168.2.1 The card Subnet Mask is set to 255.255.255.0.
ON	**ON**		The card IP Address is set to 10.1.2.1. The card Subnet Mask is set to 255.255.255.0.

a. DHCP Mode is assumed until the user changes the settings in DashBoard.

SW3 — Master Password Override

SW3 is used to override the Master Password. The Master Password feature limits the card to support only authenticated connections. Refer to the section "**Using a Master Password**" on page 2-8 for details.

- **OFF** — This is the recommended position. A user-specified Master Password is used. The default password is **`password`**. It can be changed using DashBoard as outlined in the section "**Using a Master Password**" on page 2-8.
- **ON** — This position is used to recover a lost Master Password. The user-specified password is temporarily ignored, and the default value of **`password`** is used.

SW4

SW4 is not implemented at this time and should be left in the **OFF** position.

Monitoring the MFC-8322-N

The front-edge of the card has LED indicators for indicating alarms, and communication activity. (**Figure 4.4**)

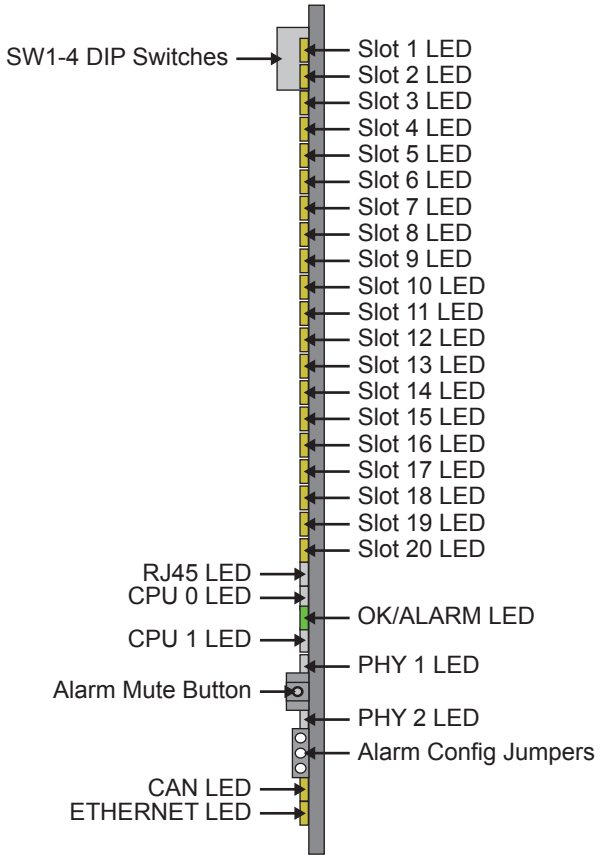

***Figure 4.4** MFC-8322-N and MFC-8322-NS Card-edge Controls*

Table 4.2 provides information on the LED displays.

Table 4.2 MFC-8322-N LED Descriptions

LED	Color	Description
Slot #	Yellow	When lit, this LED indicates that the ethernet link to the specified frame slot is established (link is up).
	Flashing Yellow	When flashing, this LED indicates the ethernet link is established, and communication is currently taking place.
	Off	When off, this LED indicates that the ethernet link to the specified frame slot is unavailable (link is down).
RJ45	This LED reports the same information as the ETHERNET LED.	
OK/ALARM[a]	Green	When lit green, this LED indicates the card is operating correctly.
	Flashing Green	When flashing, this LED indicates a DataSafe mismatch.
	Red	When lit red, this LED indicates: • the card is booting, or • a major alarm condition is occurring in the frame such as the frame door has been left open too long.

Table 4.2 MFC-8322-N LED Descriptions

LED	Color	Description
CPU #	Yellow	When lit, this LED indicates that the ethernet link to the internal GigE switch is established (link is up).
	Flashing Yellow	When lit, this LED indicates that communication activity is occurring on the internal GigE switch.
	Off	When off, this LED indicates the ethernet link to the internal GigE switch is unavailable (link is down).
PHY 1	This LED reports the same information as the CPU 1 LED.	
PHY 2	This LED reports the same information as the CPU 0 LED.	
CAN	Flashing Yellow	When flashing yellow, this LED indicates the card is communicating, over the CAN bus, with the other cards within the frame.
	Off	When off, this LED indicates an absence of incoming messages.
ETHERNET	Yellow	When lit yellow, this LED indicates a valid ethernet connection but is not receiving messages from DashBoard, a control panel, or an external SNMP agent.
	Flashing Yellow	When flashing yellow, this LED indicates the card is communicating over the ethernet connection to DashBoard, a control panel, or an external SNMP agent.
	Off	When off, this LED indicates an absence of ethernet connection.

a. This LED reports the most severe condition.

SNMP Monitoring on the MFC-8322-NS

The MFC-8322-NS provides optional support for remote monitoring and control of your frame and openGear cards using SNMP (Simple Network Management Protocol), which is compatible with many third-party monitoring and control tools. You must obtain a license key from your openGear sales representative to enable SNMP support.

For More Information on...

- enabling and configuring the SNMP Agent for your MFC-8322-NS, refer to the section "**Enabling SNMP Support**" on page 2-10.

MFC-8320-S Setup

In This Chapter

This chapter provides information on setting up and using the card-edge controls of the MFC-8320-S Controller Card.

The following topics are discussed:

- Card-edge Controls for the MFC-8320-S
- Configuring the DIP Switches
- Monitoring the MFC-8320-S

Card-edge Controls for the MFC-8320-S

This section provides information on the jumpers, buttons and LEDs for the MFC-8320-S. Refer to **Figure 5.1** for the location of card control features such as the **Alarm Mute** button, and the **Alarm Config** jumpers.

Note — *The functionality of the MFC-8320-S depends on the openGear frame it is installed in. When installed in a DFR-8310 series frame, the MFC-8320-S does not provide an ethernet connection. However, when installed in a DFR-8321 series frame, the MFC-8320-S provides a single DashBoard connection.*

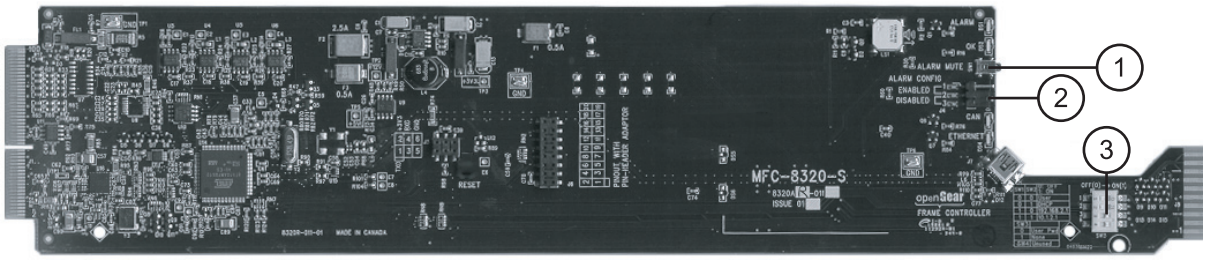

Figure 5.1 *MFC-8320-S Card Controls*

1) Alarm Mute Button	2) Alarm Config Jumper	3) DIP Switches

1. Alarm Mute Button

The **Alarm Mute** button on the card-edge of the MFC-8320-S mutes the audio alarm for two minutes. If a fault condition is still present when the mute time-out ends, the card re-activates the audio alarm.

2. Alarm Config Jumper

The **Alarm Config** jumper enables or disables the audio alarm signal. The Alarm LED is still lit if alarm conditions are occurring, but the audio will be off. Refer to **Figure 5.2** and the card labeling for jumper positions.

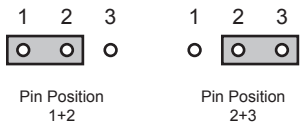

Figure 5.2 *Alarm Config Jumper — Pin Positions*

- **Enabled** — To enable the alarm feature, set the jumper into **Position 1+2**.
- **Disabled** — To disable the alarm feature, set the jumper into **Position 2+3**.

3. DIP Switches

SW1 and **SW2** are used in conjunction with the DashBoard menus to set the IP Address of the MFC-8320-S. Refer to the section "**Configuring the DIP Switches**" on page 5-3 for details.

SW3 is used to override the Master Password for the MFC-8300 card. This password limits access to the card, and the cards installed in the frame.

Configuring the DIP Switches

This section briefly summarizes the **DIP Switch** settings on the MFC-8320-S. **Figure 5.3** shows the DIP Switches in the **ON** position.

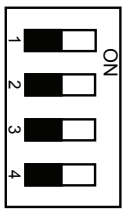

Figure 5.3 *DIP Switches — Set to the ON Positions*

SW1, SW2 — IP Address Setup

SW1 and **SW2** are used in conjunction with the DashBoard menus to set the IP Address of the MFC-8320-S. Refer to **Table 5.1** for DIP Switch positions. For information on configuring the network settings for your card, refer to the section "**Network Configuration**" on page 2-5.

Important — *The settings related to ethernet setup only apply when using a DFR-8321 series frame. When installed in a DFR-8310 series frame, the ethernet port is not supported by the MFC-8320-S, and no communication with DashBoard is possible.*

Table 5.1 SW1 and SW2 Positions

SW1 Position	SW2 Position	Controlled via DashBoard	Descriptions
OFF	**OFF**	✓	The card network settings can be set by the user from the DashBoard **Network** tab[a]. (default)
OFF	**ON**		The card network settings are automatically assigned (DHCP Mode).
ON	**OFF**		The card IP Address is set to 192.168.2.1 The card Subnet Mask is set to 255.255.255.0.
ON	**ON**		The card IP Address is set to 10.1.2.1. The card Subnet Mask is set to 255.255.255.0.

a. DHCP Mode is assumed until the user changes the settings in DashBoard.

SW3 — Master Password Override

SW3 is used to override the Master Password. This feature forces a reset of the Master Password. Refer to the section "**Using a Master Password**" on page 2-8 for details.

Note — *You must have DashBoard version 4.0.0 or higher, and MFC-8320-S software version 1.10 or higher.*

- **OFF** — This is the recommended position. A user-specified Master Password is used. The default password is **`password`**. It can be changed using DashBoard as outlined in the section "**Using a Master Password**" on page 2-8.
- **ON** — This position is used to recover a lost Master Password. The user-specified password is temporarily ignored, and the default value of **`password`** is used.

SW4

SW4 is not implemented at this time and should be left in the **OFF** position.

Monitoring the MFC-8320-S

The front card-edge of the MFC-8320-S, and the frame door, have LED indicators for the cooling module fan, alarm, and communication activity. Refer to **Figure 5.4** for the location of the card-edge LEDs on the MFC-8320-S.

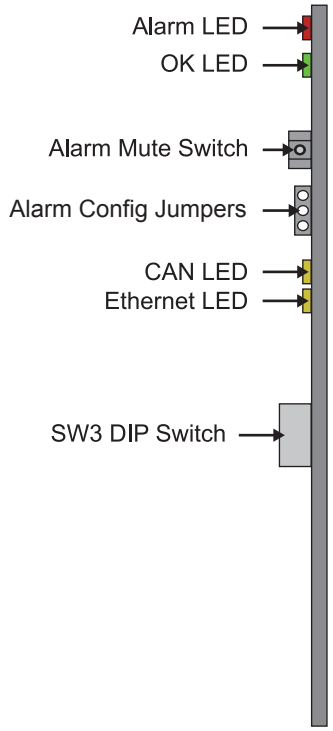

***Figure 5.4** MFC-8320-S Card-edge Controls*

Table 5.2 provides information on the LED displays of the MFC-8320-S.

Table 5.2 MFC-8320-S LED Descriptions

LED	Color	Description
Alarm	Red	When lit, this LED indicates a major alarm condition is occurring in the frame.
OK	Green	When lit, this LED indicates the MFC-8320-S is operating correctly.
CAN	Yellow	When flashing, this LED indicates the MFC-8320-S is communicating with the other cards within the frame.
	Off	When off, this LED indicates an absence of incoming messages.
Ethernet	Yellow	When lit, this LED indicates a valid ethernet connection but the card is not receiving messages from DashBoard, or a control panel.
	Flashing Yellow	When flashing, this LED indicates the card is communicating over the ethernet connection to DashBoard, or a control panel.
	Off	When off, this LED indicates an absence of ethernet connection.

MFC-8320-N Series Setup

In This Chapter

This chapter provides information on setting up and using the card-edge controls of the MFC-8320-N and MFC-8320-NS Controller Cards. The MFC-8320-N and MFC-8320-NS bring ethernet connectivity to the DFR-8300 series frames infrastructure, providing a DashBoard interface to monitor openGear cards in the frame. The MFC-8320-NS includes the SNMP Monitoring option.

The following topics are discussed:

- Card-edge Controls for the MFC-8320-N
- Configuring the DIP Switches
- Monitoring the MFC-8320-N

Card-edge Controls for the MFC-8320-N

This section provides information on the jumpers, buttons and LEDs for the MFC-8320-N and MFC-8320-NS. Refer to **Figure 6.1** for the location of card control features such as the **Alarm Mute** button, and the **Alarm Config** jumpers.

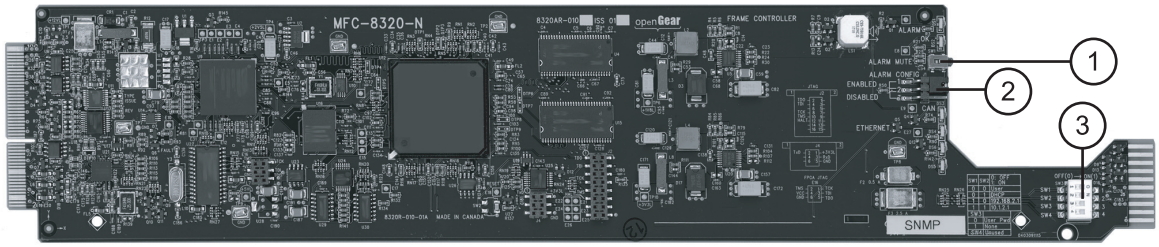

***Figure 6.1** MFC-8320-N — Card Control Locations*

1) Alarm Mute Button	2) Alarm Config Jumper	3) DIP Switches

1. Alarm Mute Button

The **Alarm Mute** button on the card-edge of the MFC-8320-N mutes the audio alarm for two minutes. If a fault condition is still present when the mute time-out ends, the card re-activates the audio alarm.

2. Alarm Config Jumper

The **Alarm Config** jumper enables or disables the audio alarm signal. The Alarm LED is still lit if alarm conditions are occurring, but the audio will be off. Refer to **Figure 6.2** and the card labeling for jumper positions.

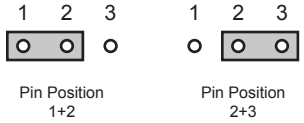

***Figure 6.2** Alarm Config Jumper — Pin Positions*

- **Enabled** — To enable the alarm feature, set the jumper into **Position 1+2**.
- **Disabled** — To disable the alarm feature, set the jumper into **Position 2+3**.

3. DIP Switches

SW1 and **SW2** are used in conjunction with the DashBoard menus to set the IP Address of the MFC-8320-N. **SW3** is used to override the Master Password for the frame. Refer to the section "**Configuring the DIP Switches**" on page 6-3 for details.

Configuring the DIP Switches

This section briefly summarizes the **DIP Switch** settings on the MFC-8320-N. Refer to **Figure 6.1** for their locations. Note that **Figure 6.3** shows the DIP Switches in the **ON** position.

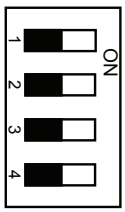

***Figure 6.3** DIP Switches — Set to the ON Positions*

SW1, SW2 — IP Address Setup

SW1 and **SW2** are used in conjunction with the DashBoard menus to set the IP Address of the MFC-8320-N. Refer to **Table 6.1** and the card labelling for DIP Switch positions. For more information on configuring the network settings for your card, refer to the section "**Network Configuration**" on page 2-5.

Table 6.1 SW1 and SW2 Positions

SW1 Position	SW2 Position	Controlled via DashBoard	Descriptions
OFF	**OFF**	✓	The card network settings can be set by the user from the DashBoard **Network** tab[a]. (default)
OFF	**ON**		The card network settings are automatically assigned (DHCP Mode).
ON	**OFF**		The card IP Address is set to 192.168.2.1 The card Subnet Mask is set to 255.255.255.0.
ON	**ON**		The card IP Address is set to 10.1.2.1. The card Subnet Mask is set to 255.255.255.0.

a. DHCP Mode is assumed until the user changes the settings in DashBoard.

SW3 — Master Password Override

SW3 is used to override the Master Password. The Master Password feature limits the MFC-8320-N to support only authenticated connections. Refer to the section "**Using a Master Password**" on page 2-8 for details.

Note — *You must have DashBoard version 4.0.0 or higher with MFC-8320-N software version 2.50 or higher.*

- **OFF** — This is the recommended position. A user-specified Master Password is used. The default password is **`password`**. It can be changed using DashBoard as outlined in the section "**Using a Master Password**" on page 2-8.
- **ON** — This position is used to recover a lost Master Password. The user-specified password is temporarily ignored, and the default value of **`password`** is used.

SW4

SW4 is not implemented at this time and should be left in the **OFF** position.

Monitoring the MFC-8320-N

The front card-edge of the MFC-8320-N, and the frame door, have LED indicators for the cooling module fan, alarm, and communication activity. (**Figure 6.4**)

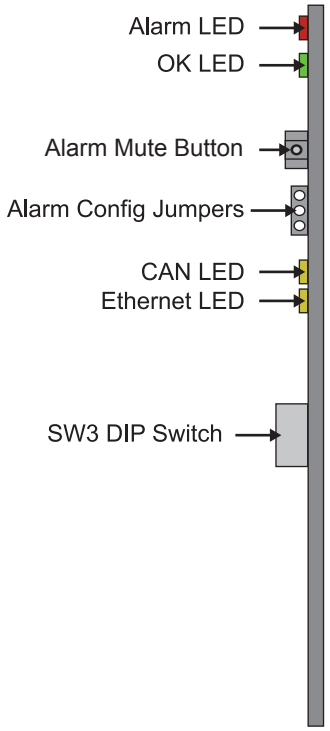

***Figure 6.4** MFC-8320-N Card-edge Controls*

Table 6.2 provides information on the LED displays of the MFC-8320-N.

Table 6.2 MFC-8320-N LED Descriptions

LED	Color	Description
Alarm	Red	When lit, this LED indicates a major alarm condition is occurring in the frame.
OK	Green	When lit, this LED indicates the MFC-8320-N is operating correctly.
	Flashing Green	When flashing, this LED indicates a DataSafe mismatch.
CAN	Flashing Yellow	When flashing, this LED indicates the MFC-8320-N is communicating with the other cards within the frame.
	Off	When off, this LED indicates an absence of incoming messages.
Ethernet	Yellow	When lit, this LED indicates a valid ethernet connection but is not receiving messages from DashBoard, a control panel, or an external SNMP agent.
	Flashing Yellow	When flashing, this LED indicates the card is communicating over the ethernet connection to DashBoard, a control panel, or an external SNMP agent.
	Off	When off, this LED indicates an absence of ethernet connection.

SNMP Monitoring on the MFC-8320-NS

The MFC-8320-NS provides optional support for remote monitoring and control of your frame and openGear cards using SNMP (Simple Network Management Protocol), which is compatible with many third-party monitoring and control tools. You must obtain a license key from Ross Video to enable SNMP support.

For More Information on...

- enabling and configuring the SNMP Agent for your MFC-8320-NS, refer to the section "**Enabling SNMP Support**" on page 2-10.

MFC-8310 Setup

In This Chapter

This chapter provides information on using the MFC-8310 Controller Card. The MFC-8310 enables you to monitor the fans, power supply status, and the cards installed in the DFR-8300 series frames.

The following topics are discussed:

- Controls for the MFC-8310

Controls for the MFC-8310

This section provides information on the jumpers, buttons, and LEDs for the MFC-8310. Refer to **Figure 7.1** for the location of the LEDs and controls for fan, alarm, and communications.

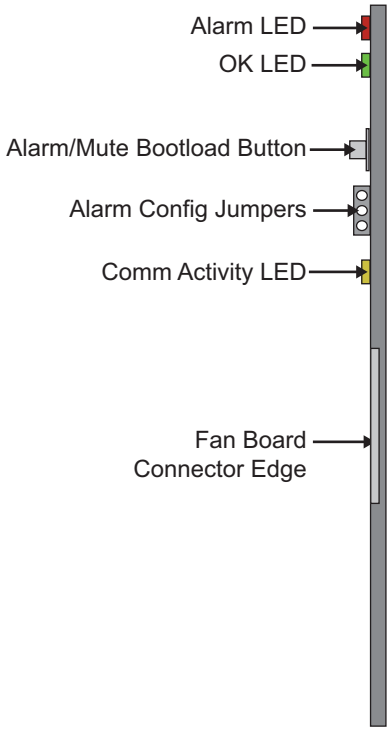

Figure 7.1 *MFC-8310 Card-edge Controls*

Buttons and Jumpers on the MFC-8310

This section briefly summarizes the available buttons and jumpers on the MFC-8310.

Alarm Mute/Bootload Button

If a card is reporting an error, pressing the **Alarm Mute** button mutes the audio alarm until another fault condition occurs. This button is also used as a **Bootload** button for factory service in the unlikely event of a complete card failure.

Alarm Configuration Jumper

The Alarm Configuration Jumper enables or disables the audio alarm signal. The Alarm LED is still lit if alarm conditions are occurring, but the audio will be off.

Monitoring the MFC-8310

In the DFR-8310 series frames, the CFM-8310 (Cooling Fan Module) provides LED and Alarm switching controls to the front-edge of the DFR-8310 frame door. Refer to the ***DFR-8300 and OG3-FR Series User Manual*** for details on these LEDs. **Table 7.1** provides information on the LED displays of the MFC-8310.

Table 7.1 MFC-8310 LED Descriptions

LED	Color	Description
Alarm	Red	When lit, this LED indicates an alarm condition is occurring in the frame.
Status OK	Green	When lit, this LED indicates the MFC-8310 is operating correctly.
Comm Activity	Yellow	When lit, this LED indicates the card is communicating within the frame.

MFC-8310-N Series Setup

In This Chapter

This chapter provides instructions for setting up the MFC-8310-N and MFC-8310-NS Network Controller Cards. The MFC-8310-N brings ethernet connectivity to the DFR-8300 series frame infrastructure, providing a DashBoard interface to monitor openGear cards in the frame. The MFC-8310-NS includes the SNMP Monitoring option.

The following topics are discussed:

- Controls for the MFC-8310-N Series
- Configuring the DIP Switches
- Monitoring the MFC-8310-N

Controls for the MFC-8310-N Series

This section provides information on the jumpers, buttons and LEDs for the MFC-8310-N series. Refer to **Figure 8.1** for the location of the controls for fan, alarm, and communications.

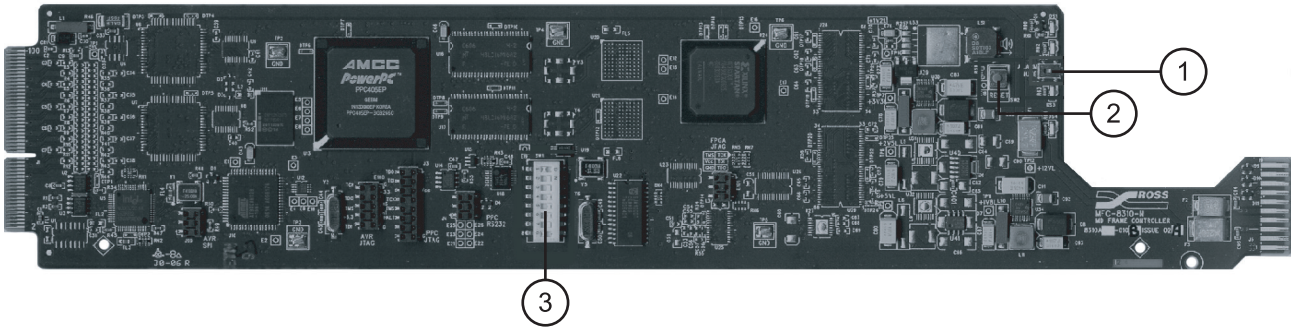

Figure 8.1 *MFC-8310-N Series DIP Switches and Card-edge Buttons*

1) Alarm Mute Button	2) Reset Button	3) DIP Switches

1. Alarm Mute Button

When a card in the frame is reporting an error, pressing the **Alarm Mute** button will mute the audio alarm until another fault condition occurs. This button is also used as a **Bootload** button for factory service in the unlikely event of a complete card failure.

2. Reset Button

This button is used to restart both of the on-board processors: the fan control processor and the communications processor. The communications processor requires approximately 30 seconds to restart and re-establish network communications.

3. DIP Switches

The DIP Switches provide card-edge controls for configuring the Audio alarm and specifying an IP address for the card. Refer to the section "**Configuring the DIP Switches**" on page 8-3 for details.

Configuring the DIP Switches

This section briefly summarizes the **DIP Switch** settings on the MFC-8310-N. Refer to **Figure 8.1** for the location of the DIP Switches. Note that **Figure 8.3** shows the DIP Switches in the **ON** position.

Note — *You must remove the MFC-8310-N from the frame, or remove the adjacent cards, to access the **DIP Switches**.*

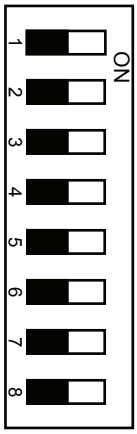

***Figure 8.2** DIP Switches — Set to the ON Positions*

SW1 — Audio Alarm Setup

SW1 configures the **Audio Alarm Disable** feature as follows:

- **ON** — This setting activates the feature. Alarms will not be audible.
- **OFF** — This setting de-activates the feature. Alarms will be audible.

SW2 to SW6

SW2 to **SW6** are not implemented at this time and should be left in the **OFF** positions.

SW7 — Master Password Override

SW7 is used to override the Master Password. The Master Password feature limits the MFC-8310-N to support only authenticated connections. Refer to the section "**Using a Master Password**" on page 2-8 for details.

Note — *You must have DashBoard version 4.0.0 or higher with MFC-8310-N software version 2.50 or higher.*

- **OFF** — This is the recommended position. A user-specified Master Password is used. The default password is **`password`**. It can be changed using DashBoard as outlined in the section "**Using a Master Password**" on page 2-8.
- **ON** — This position is used to recover a lost Master Password. The user-specified password is temporarily ignored, and the default value of **`password`** is used.

SW8 — IP Address Setup

SW8 enables you to select the IP Address of the MFC-8310-N as described in **Table 8.1**. For more information on configuring the network settings for your card, refer to the section

"**Network Configuration**" on page 2-5

Table 8.1 SW8 Positions

SW8 Position	Controlled via DashBoard	Descriptions
OFF	✓	The card network settings can be set by the user from the DashBoard **Network** tab[a]. (default)
ON		The card IP Address is set to 192.168.1.1 The card Subnet Mask is set to 255.255.0.0.

a. DHCP Mode is assumed until the user changes the settings in DashBoard.

Monitoring the MFC-8310-N

The front-edge of the MFC-8310-N, and the frame door, have LED indicators for the cooling module fan, alarm, and communication activity. (**Figure 8.3**)

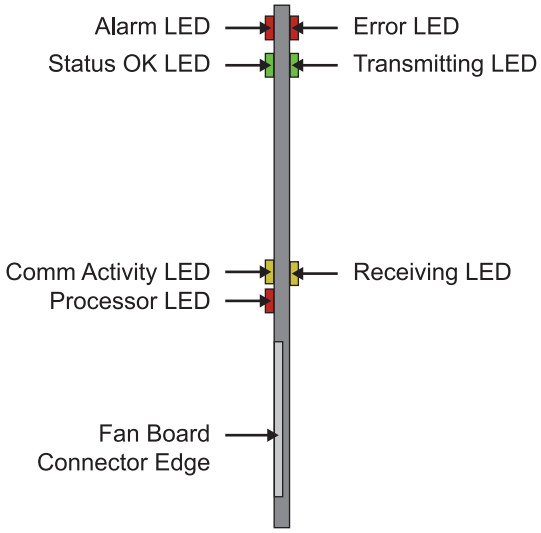

***Figure 8.3** MFC-8310-N Card-edge Controls*

Table 8.2 provides information on the LED displays of the MFC-8310-N.

Table 8.2 MFC-8310-N Series LED Descriptions

LED	Color	Description
Alarm	Red	When lit, this LED indicates an alarm condition is occurring in the frame.
Status OK	Green	When lit, this LED indicates the card is operating correctly. The fan control process is operating correctly.
	Flashing Green	When flashing, this LED indicates a DataSafe mismatch.
Comm Activity	Yellow	When lit, this LED indicates the card is communicating with the frame.
Processor	Red	This LED flashes red briefly when the card is first powered up. If lit at any other time, this LED indicates that the communications processor is not running.
Error	Red	This LED is lit when the card is first powered up and the card is booting up. The LED turns off once boot up is complete. If this LED is lit during normal operation, it indicates that the communications software is not running correctly. You must restart the process by pressing the **Reset** button.
Transmitting	Green	When lit, this LED indicates that the card is transmitting messages on the internal communications bus.
Receiving	Yellow	When lit, this LED indicates that the card is receiving messages via the internal bus.

Enabling SNMP Monitoring on the MFC-8310-NS

The MFC-8310-NS provides optional support for remote monitoring and control of your frame and openGear cards using SNMP (Simple Network Management Protocol), which is compatible with many third-party monitoring and control tools. You must obtain a license key from Ross Video to enable SNMP support.

For More Information on...

- enabling and configuring the SNMP Agent for your card, refer to the section "**Enabling SNMP Support**" on page 2-10.

DataSafe™

In This Chapter

DataSafe™ enables you to load and store card parameters automatically, or you can load from and store to a single file in DashBoard. This feature is available for frames using the MFC-8322-N, MFC-8320-N, and MFC-8310-NS cards only. For more information on using the DataSafe feature in DashBoard, refer to your ***DashBoard Control System User Manual***.

Note — *DashBoard version 2.3.0 or higher is required to access DataSafe features.*

This chapter contains the following sections:

- Overview
- DataSafe and Network Controller Cards

Overview

The following DataSafe features are available when using a MFC-8300 Series Network Controller Card:

- The Network Controller card monitors all traffic going through it. On power-up, the Network Controller card queries for all card information.
- Changes to writable parameters of cards is noted and the current version of all parameters is stored. Parameter data is stored locally on the network card for every slot independently.
- Parameter data can be saved in a single file.
- DataSafe enables the user to send all the parameter data to a card slot or to every slot on the network that matches.
- You can use a limited DashBoard view to update a subset of cards instead of the entire connected view. DashBoard sends the file to a specific network card and slot for use. Once received, it updates the card if the attached card matches the data sent.
- DataSafe stores and recalls the parameters automatically with or without a network connection.
- When a DataSafe mismatch occurs, there is an audible alarm from the card and a warning message is displayed in DashBoard. You can clear the alarm using an option in the **Setup** tab, or by using the card-edge controls. A DataSafe mismatch occurs when the software version or the card type does not match the saved data for that slot.
- Note that DataSafe is disabled by default.

For More Information on...

- the options available in the **DataSafe** tab, refer to the section "**DataSafe Tab**" on page 10-10.
- enabling DataSafe for your Network Controller card, refer to the section "**Enabling DataSafe**" on page 9-3.

DataSafe and Network Controller Cards

This section briefly summarizes the DataSafe™ options available for the MFC-8300 Series Network Controller Card.

Using the Alarm Button

An audible alarm indicates when a DataSafe mismatch occurs, such as when a card is installed that does not match the compatibility range of the DataSafe saved data.

- Single pressing the **Alarm** button mutes the audible alarm, but does not mask the alarm displayed in DashBoard. For information on masking DataSafe mismatch warnings, refer to the section "**Hiding the DataSafe Warnings**" on page 9-3.
- Holding the **Alarm Mute** button on the MFC-8300 Series card down for approximately 5 seconds causes the new settings of all cards to be copied to the saved DataSafe slots.

Enabling DataSafe

All slot fields in the **DataSafe** tab of your Network Controller Card are set to **Disable** by default. The Disable feature prevents DashBoard from automatically recalling the card parameters for the specified slot. You may still monitor the status of the cards in those slots, and DashBoard still updates the slot information when a new card is installed or when a card is removed from the slot and replaced with another card.

To enable DataSafe for a specific slot

1. From the **Tree View** in DashBoard, double-click the Network Controller Card to display a corresponding **Device Tab** in the **Device View**.
2. Select the **DataSafe** tab.
3. Locate the card slot(s) you wish to enable DataSafe for.
4. Clear the corresponding checkbox in the **Disable** column.

Re-naming a Card Slot

DashBoard enables you to re-name a card slot and have that name display in all Tree Views and the DataSafe tab window for the specific Network Controller Card.

To re-name an openGear slot in the Tree View

1. From the **Tree View** in DashBoard, double-click the Network Controller Card to display a corresponding **Device Tab** in the **Device View**.
2. Select the **Setup** tab.
3. In the **Card Slot Names** section of the **Setup** tab, locate the slot you wish to re-name.
4. Enter the new name for the card slot in the text field provided.

Hiding the DataSafe Warnings

A DataSafe mismatch warning occurs in DashBoard when:

- a card of the same type is installed that does not match the software of the card previously installed in that slot; or
- a card of a different type is installed in the slot.

DashBoard includes a **Mask Warning** option in the **DataSafe** tab for each Network Controller Card. Enabling the Mask Warning option prevents error messages from displaying in the **Data Safe State** field of the **Hardware** tab.

To hide DataSafe mismatch warnings in DashBoard

1. From the **Tree View** in DashBoard, double-click the Network Controller Card to display a corresponding **Device Tab** in the **Device View**.
2. Select the **DataSafe** tab.
3. Mask the DataSafe mismatch warnings as follows:
   - **Checkbox cleared** — DashBoard displays an error message in the **Data Safe State** field of the **Hardware** tab. Information is also displayed in the **Conflict** field of the **DataSafe** tab to alert the user that a software mismatch is occurring. This is the default setting.
   - **Checkbox selected** — This feature is disabled. DashBoard does not update the **Data Safe State** field of the **Hardware** tab, nor the **Conflict** field of the **DataSafe** tab.

Forcing DataSafe Files to Load

The **Conflict** field in the **DataSafe** tab indicates when a currently installed card has a card type or software incompatibility.

- When there is a DataSafe mismatch on the slot, the **Update Slot** button is enabled for that slot. Click this button to replace the last saved parameters with the current card parameters.
- Use the **Force** button in the **DataSafe** tab to force the currently saved DataSafe data to load to all cards with software mismatches and store the new information. Refer to the ***DashBoard Control System User Manual*** for details.

Resetting a Network Controller Card to Factory Defaults

Through DashBoard, you can reset the factory settings of the Network Controller Card using the **Restore** button in the **Setup** tab. Note that the frame name is unaffected.

Important — *Clicking the **Restore** button erases all DataSafe data for the Network Controller Card.*

Clicking the **Restore** button in the **Setup** tab of the Network Controller card performs the following tasks in DashBoard:

- All values in the **Setup** tab of the Network Controller card are reset to the factory defaults.
- All Slot names are deleted. Slot name fields are blank and all DashBoard fields are updated with the default names.

DashBoard Menus

In This Chapter

This chapter provides information the DashBoard menus available for the MFC-8300 Series Controller Cards. Note that some of the available menus and options are dependent on the card you are using. Default values are indicated with an asterisk (*).

The DashBoard Control System enables you to monitor and control openGear frames and cards from a computer. DashBoard communicates with other cards in the DFR-8300 series frame through the MFC-8300 Series Controller Cards. You can download the DashBoard software and manual from the Ross Video website.

The following topics are discussed:

- Status Tabs
- Setup Tab
- Network Tab
- DataSafe Tab
- SNMP Tab

Status Tabs

This section summarizes the **Status** tabs displayed in DashBoard for the MFC-8300 Series Controller Cards. The indicators in the Status tabs can vary in severity from green (valid), yellow (caution), to red (alarm). DashBoard reports the most severe alarm for a single field. Alarm colors are noted within the tables as text set in brackets next to the parameter name.

Product Tab

Table 10.1 summarizes the read-only information displayed in the **Product** tab.

Table 10.1 Product Tab Items

Tab Title	Item	Parameters	Description
Product	Frame Name		Name as defined by the user in the **Network** tab. Refer to **Table 10.7** on page 10-9.
	Frame S/N[a]		Indicates the Frame Serial Number
	Product		Indicates the model number of the card
	Supplier	Ross Video Ltd.	
	Board Rev	##	Indicates the hardware revision
	Board S/N	#########	Indicates the card serial number
	MAC Address	##-##-##-##-##-##	MAC Address for the card
	Software Rev	#.##	Indicates the card software version

a. This field is not available when using an DFR-8310 series frame.

Network Tab

Table 10.2 summarizes the read-only information displayed in the **Network** tab.

Table 10.2 Network Tab Items

Tab Title	Item	Parameters	Description
Current Settings	Network Source	DHCP - set by user	**MFC-832x-x: SW1** and **SW2** are set to **OFF**. **MFC-8310-N: SW8** is set to **OFF**.
			The **Addressing Mode** is set to **DHCP** in DashBoard. The network automatically assigns the card ethernet settings.
		Static - set by user	**MFC-832x-x: SW1** and **SW2** are set to **OFF**. **MFC-8310-N: SW8** is set to **OFF**.

Table 10.2 Network Tab Items

Tab Title	Item	Parameters	Description
Current Settings	Network Source	Static - set by user	The **Addressing Mode** is set to **Static** in DashBoard. User defines the ethernet settings from the **Network** tab.
		DHCP - set by DIP[a]	**MFC-832x-x: SW1** is set to **OFF** and **SW2** is set to **ON**.
			Network automatically assigns the card ethernet settings.
		Factory Default[b]	**MFC-8310-N: SW8** is set to **OFF**.
			MFC-8310-N: IP Address of the card is set to 192.168.1.1.
		Factory Default 1[a]	**MFC-832x-x: SW1** is set to **ON** and **SW2** is set to **OFF**.
			IP Address of the card is set to 192.168.2.1
		Factory Default 2[a]	**MFC-832x-x: SW1** and **SW2** are set to **ON**.
			IP Address of the card is set to 10.1.2.1.
	IP Address	##.#.###.###	IP Address of the card
	Subnet Mask	###.###.#.#	Subnet Mask for the card
	Default Gateway	##.#.#.#	Card gateway
	NTP Server	##.#.#.#	IP Address of the NTP server used as a time source
Connection Management	Access Mode	Open	No access restrictions; the MFC-8300 Series Controller Cards accepts connections from all DashBoard clients
		Authenticated Only	Access control enabled; only DashBoard clients version 4.0.0 or higher can connect. The user must be authenticated by the DashBoard Server and URM, or must know the Master Password of the MFC-8300 Series Controller Cards.
	Master Password	********	Indicates that a user-specified password is set for the MFC-8300 series card
		Overridden by DIP switch	The user-specified password is overridden because the DIP Switch[c] is enabled. The Master Password is now overridden to the factory default value of **`password`**.
	Active Connections	#	Number of external control devices, such as DashBoard, connected via TCP to the frame

Table 10.2 Network Tab Items

Tab Title	Item	Parameters	Description
Internal Bus Status	Active Cards	#	Number of active cards within the frame
	Bus Load (%)	#	Communication traffic of the internal CAN Bus. A high value indicates a high amount of traffic

a. This item is not available when using the MFC-8310-N.
b. This item is not available when using the MFC-8322-N, MFC-8322-S, MFC-8320-N or MFC-8320-S.
c. This is SW3 on the MFC-8322-N, MFC-8322-S, MFC-8320-N and MFC-8320-S, and SW7 on the MFC-8310-N.

Hardware Tab

Table 10.3 summarizes the read-only information displayed in the **Hardware** tab.

Table 10.3 Hardware Tab Items

Tab Title	Item	Parameters	Description	
Hardware	Frame status	OK (Green)	Indicates the status of the frame, frame power supplies, and/or cards in the frame	
		Running a backup code (Yellow)[a]		
		Fan door open (Red)		
		PSU fuse blown (Red)		
		PSU fault (Red)		
		Frame Power > 150W[b] (Red)		
		Frame Power >350W (Red)[c]		
		PSU fan stalled (Red)		
		Card Fault (Red)		
		PSU AC missing (Red)[c]		
		PSU power off (Red)[c]		
		Ref card missing (Red)[c]		
	Mid-Plane ID[d]	#	Indicates the board issue	
	Audio Alarm	Enabled	Indicates that the **Alarm Config** jumper is set to enable audio alarms	
		Disabled	The Audio Alarm is disabled	
	Voltage (mV)	#	Supply Voltage	
	Current (mA)	#	Current consumption of the card	
	Negative Rail (mV)	#	Indicates the negative voltage of the card	
	Fan Speed	#	Indicates the fan speed of the frame	This alarm is set using the **Fan Speed** option in the **Setup** tab.
		x / y[c]	Current Speed (x) / Maximum Speed (y)	

Table 10.3 Hardware Tab Items

Tab Title	Item	Parameters	Description
Hardware	Fan Door	Open	Indicates the state of the fan door
		Closed	
	PSU# Status[e]	Present (Green)	Indicates the specified frame power supply is installed in the frame and the corresponding **Notify on PSU Missing** alarm is may or may not be enabled on the **Setup** tab.
		Not Present (Green)	Indicates the specified frame power supply is not installed, but the corresponding **Notify on PSU Missing** alarm is disabled on the **Setup** tab.
		Missing (Yellow)	Indicates that the specified frame power supply is not installed in the frame, or a communication error has occurred, and the corresponding **Notify on PSU Missing** alarm is enabled on the **Setup** tab.
	CPU headroom	x.xx/y.yy/z.zz[f]	CPU Load average for the Primary Processor of the card.
	RAM available (megabytes)	x/y	Memory Used (x) / Total Memory (y)
	AVR CPU Headroom[g]	#	Processing power available for the Auxiliary Processor of the card
	AVR RAM available	#	On-board processing memory available for the Auxiliary Process of the card
	AVR State	#	Indicates the state of the AVR on the card
	DataSafe State[h]	Green	No DataSafe mismatch is occurring
		Yellow	Indicates that a new card has been installed in the frame and a DataSafe mismatch has occurred.

a. This message only applies when using an MFC-8322-S or MFC-8320-S.
b. This message does not apply when using an MFC-8322-S or MFC-8322-N.
c. This message only applies to the OG3-FR series frames.
d. This field is not applicable to cards installed in the DFR-8310 series frames.
e. These fields are only available when using an MFC-8322-N, MFC-8320-N, or MFC-8310-N.
f. The CPU Load average is displayed in the following format where x.xx represents in the last minute, y.yy represents the last five minutes, and z.zz is the last fifteen minutes.
g. This field is only available when using an MFC-8310-N.
h. This field is not displayed when using an MFC-8322-S or MFC-8320-S.

Power Tab

Table 10.4 summarizes the read-only information displayed in the **Power** tab.

Table 10.4 Power Tab Items

Tab Title	Item	Parameters	Description
Power	Ambient Temp (°C)	#	Ambient temperature within the frame
	Frame Power (W)	#	Frame power consumption
	Max Slot Current (mA)	#	Indicates the highest power usage by a single slot in the frame
PSU1	PSU1 Model	#	Indicates the power supply type installed in the PSU1 slot
	Serial Number[a]	#	Serial number of PSU1
	Software Rev[a]	#	Software revision code of PSU1
	+12V Current (mA)	#	Indicates the power supplied by PSU1
	-7.5V Current (mA)	#	
	Temperature (C)	#	Reports the temperature of PSU1 in Celsius
PSU2	PSU2 Model[a]	#	Power supply model installed in the PSU2 slot
	Serial Number[a]	#	Serial number of PSU2
	Software Rev[a]	#	Software revision code of PSU2
	+12V Current (mA)	#	Indicates the power supplied by PSU2
	-7.5V Current (mA)	#	
	Temperature (C)	#	Temperature of PSU2

a. Available only when using an MFC-8322-S or MFC-8322-N.

Setup Tab

Table 10.5 summarizes the **Setup** options available in DashBoard for the MFC-8300 Series Controller Cards.

Table 10.5 Setup Menu Items

Menu Title	Item	Parameters	Description
Setup	Fans Installed[a] [b]	Selected*	Alarms are displayed in the **Frame Status** field of the **Hardware** tab
		Cleared	No alarms are displayed in the **Frame Status** field of the **Hardware** tab
	Fan Speed[c]	Auto*	Card automatically controls the cooling fan speed of the frame for optimum cooling
		Max	Frame fans always run at maximum speed
	Notify on Card Fault	Selected*	Card displays an alarm in DashBoard and the **FAULT** LED lights solid red on the frame when a fault condition is reported by a card in the frame
		Cleared	Disables this feature
	Notify on PSU# Missing[d]	Selected	An alarm condition is flagged if the corresponding power supply is not present. The alarm appears in DashBoard via SNMP (MFC-832x-NS version only), and via the LCD Diagnostic Panel (OG3-FR series frames only)
		Cleared*	Disables the PSU Status alarm for the specified frame power supply.
	Licensable Features		Indicates if the software key for any licensable features is installed
	Factory Settings[e]	Restore	Defaults all the values in the **Setup** tab only. Refer to the sections below for details.
	Card Slot Names - Slot #[f]	#	Configures the name displayed in DashBoard for the specified slot.

a. This item is not available for the MFC-8310-N.
b. This option is read-only when the frame door is closed.
c. This item is not available for the MFC-8310-N.
d. This item is only available when using an MFC-8322-N, MFC-8320-N, or MFC-8310-N.
e. This option is labeled as Factory Defaults when using an MFC-8322-S, or MFC-8320-S.
f. This field is not applicable when using an MFC-8322-S or MFC-8320-S.

Restoring Menu Items to Factory Default Settings

Table 10.6 lists the editable menu items that are reset to factory default settings when the **Restore** button is pressed in the **Setup** menu.

Table 10.6 Menu Items Restored to Factory Default Settings

Menu	Item	MFC-8322-N	MFC-8320-N	MFC-8310-N
Setup	Fans Installed	✓	✓	
	Fan Speed	✓	✓	
	Notify on Card Fault	✓	✓	
	Notify on PSU # Missing	✓	✓	✓
	Card Slot Names	✓	✓	✓
Network	All menu items			
DataSafe	Disable	✓	✓	✓
	Mask Warning	✓	✓	✓
SNMP	All menu items			

Network Tab

Table 10.7 summarizes the **Network** configuration options available in DashBoard for the MFC-8300 Series Controller Cards.

Table 10.7 Network Menu Items

Menu Title	Item	Parameters	Description
Network	Frame Name		Configures the name displayed in DashBoard for the frame the card is installed in. The Frame Name is automatically updated in the **Product** tab.
	NTP Server	##.#.#.#	This is the IP Address of the NTP server used as a time source
	Current DIP Switch	#	Indicates the position of the DIP Switches
	Addressing Mode	Static	User defines the Network settings of the card
		DHCP*	DashBoard obtains network settings automatically for the card
	IP Address	##.#.#.###	Enables you to set the IP Address of the card if the **Addressing Mode** is set to **Static**.
	Subnet Mask	###.###.###.#	Enables you to set the Subnet Mask of the card if the **Addressing Mode** is set to **Static**
	Default Gateway	##.#.#.#	Enables you to set the Default Gateway of the card if the **Addressing Mode** is set to **Static**
	Apply		Applies and saves any changes made to the **Network Settings**
	Cancel		Cancels any setting changes and resets the **Network Settings** to the previous values

DataSafe Tab

Table 10.8 summarizes the **DataSafe** options available in DashBoard for the MFC-8300 Series Controller Cards.

Note — *This tab is not available when using an MFC-8322-S or MFC-8320-S.*

This tab displays an array of cards based on the frame the selected card is installed in.

Table 10.8 DataSafe Menu Items

Menu Title	Item	Parameters	Description
### [y][a]	Card Type and Software Rev	aaa-bbbb :: #.##	Displays information for the card currently installed in that slot; where aaa-bbbb represents the card name, and #.## represents the current software version of the card.
	Correct Mismatch	<- Update Slot	Click this button to automatically update the slot with the new card information indicated in the **Conflict** field.
	Conflict		When blank, this field indicates that the card currently in the slot has the same card type and software version as the saved DataSafe data.
		##	Indicates that the software version or the card type do not match the saved data for the slot.
	Disable	Selected*	Disables DataSafe for the selected slot. You may still monitor the slot, but you cannot update the slot with any new configuration data received when a new card is installed in the slot.
		Cleared	Enables the **Conflict** field to display any card mismatch information. To update the slot, you must click the **<- Update Slot** button.
	Force		Click this button to load the current DataSafe data to the cards. This button is enabled only if a software version incompatibility exists.
	Mask Warning	Selected	The card displays a warning in DashBoard if any of the card slots have a new or changed entry.
		Cleared*	The card does not display a warning in DashBoard if any of the card slots have a new or changed entry.

a. Displays the current slot name (###) and the slot number [y]. For example, Slot 5 [1]. The slot name is set in the **Cards Slot Name** field of the **Setup** tab.

SNMP Tab

Table 10.9 summarizes the **SNMP** options available in DashBoard for the MFC-8300 Series Controller Cards with the SNMP feature licensed.

Table 10.9 SNMP Menu Items

Menu Title	Item	Parameters	Description
SNMP	Trap/Notification Target		Adds a trap/notification target
	Add		Adds the selected target
	Delete		Deletes the selected target
	Read Community String		Specifies the SNMP password for GET requests
	Write Community String		Specifies the SNMP password for SET requests
	Apply		Applies the current changes and saves them to the card memory
	Cancel		Cancels the changes

Notes on the Trap/Notification Target Feature

Keep the following in mind when adding and saving Trap/Notification targets in the **SNMP** tab:

- When entering a new target in the **Trap/Notification Target** field, type the text in the field, and then press **Enter** to enable the **Add** button.
- Click **Add** to add the new target to the **Trap/Notification Target** drop-down list.
- A maximum number of six strings are displayed in the **Trap/Notification Target** drop-down list at one time. If at the maximum number, you must select a string from the drop-down list and delete it before adding a new entry.
- Click **Apply** to save the strings in the **Trap/Notification Target** drop-down list to non-volatile memory.

DashBoard Lite Applet

In This Chapter

If you are using an MFC-8322-N, MFC-8320-N or MFC-8310-N Network Controller Card running software version 2.25 or higher, you can access the DashBoard Lite applet using a web browser. However, if your facility also has the DashBoard Server and URM installed, you will need version 2.50 or higher. The DashBoard Lite applet enables you to make card adjustments through a web browser interface instead of installing the DashBoard Control System software on your computer.

This chapter provides information on installing, accessing, and using the DashBoard Lite applet.

The following topics are discussed:

- Before You Begin
- DashBoard Lite Applet Overview
- Adding Frames to the DashBoard Lite Applet
- Using the DashBoard Lite Applet
- Uploading Software to a Card
- Troubleshooting

Before You Begin

Refer to the following sections before using the DashBoard Lite applet.

System Requirements

Ensure that your system meets the following requirements before using the DashBoard Lite applet.

- MFC-8322-N software version 2.75 or higher.
- MFC-8310-N or MFC-8320-N software version 2.25 or higher.
- If your facility also has the DashBoard Server and URM installed, you will need MFC-8320-N software version 2.50 or higher. Refer to the section "**Software Upgrades**" on page 2-12 for details on upgrading the software for your card.
- Computer running the Microsoft® Windows® XP®, Windows Vista®, or Windows 7® operating systems
- Firefox® 3 or higher or Microsoft® Internet Explorer® 7 or 8
- Java® 6 update 11 or higher
- Ensure that the Java 6 plug-in is properly configured for your web browser

To run the DashBoard Lite Applet

1. Make a note of the IP address for the frame you are attempting to access.
2. Start your web browser from your computer desktop.
3. Enter the frame IP address into the Address Bar of your web browser.
4. Press **Enter** to display the **openGear Frame Configuration** web page.
5. Click the **DashBoard Lite** icon to start the DashBoard Lite applet.
6. Wait while DashBoard Lite verifies the version of Java installed on your computer. Once your version of Java is verified, the DashBoard Lite applet opens in the web browser.

DashBoard Lite Applet Overview

When first launched, the DashBoard Lite applet connects to and displays the specific frame you entered the IP Address for, and the devices installed in that frame. The interface resembles the DashBoard interface but does not support:

- the restoring of card settings from a file
- the porting of card settings from one card to another
- the upgrading of multiple cards at one time
- DashBoard Server and URM management access controls. Only global access to the frame (via the Master Password) is supported.

Interface Overview

This section includes a brief summary of the Dashboard Lite applet interface and its components.

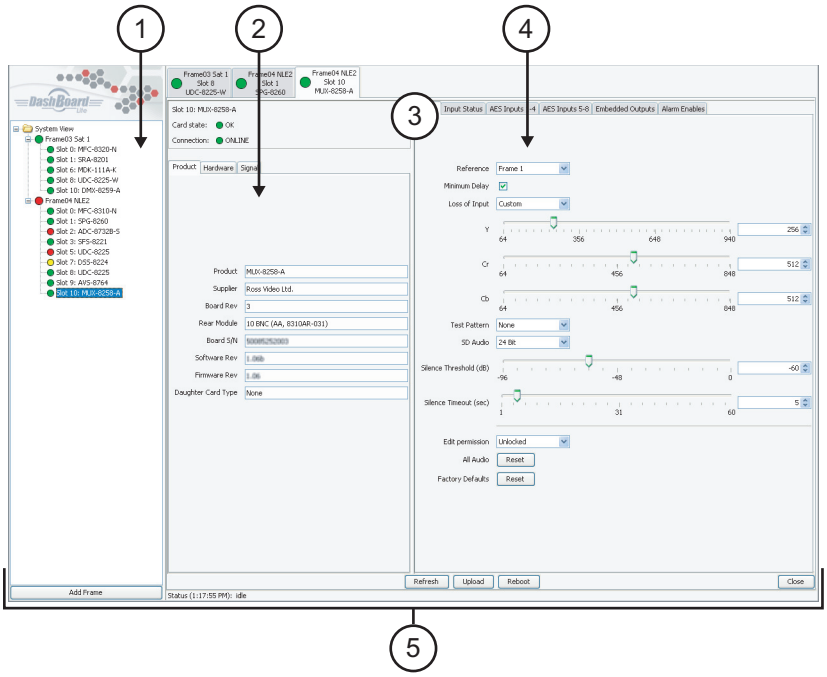

***Figure 11.1** DashBoard Lite Applet Interface Example*

1. Navigation Pane

The DashBoard Lite applet displays the following details in the **Navigation Pane**:

- An indicator for each frame. If you entered a new name using the **Add Frames** dialog, it is displayed beside the indicator. The indicator beside the frame is the worst-case status of all cards in the frame.
- The product name for each card installed in the frame and which slot it is in. The name for each card is the product name as reported by the card.
- Indicators for each card in the frame. The cards and their status are detected automatically.

2. Status Area

This area is located in the tabbed menu on the lower left of the screen. This area displays the status parameters as reported by the card including the **Product** tab. The **Product** tab displays the

product name, alarm status, details about the most serious alarm reported, and the connection status. The information in the **Status** Area is read-only.

3. Arrow Buttons

The Arrow buttons are located at the top of the vertical bar that separates the **Status** Area and the **Settings** Area within the **Device View**. Click the arrows to maximize or minimize the Status and Settings Areas in the direction of that arrow.

For example, with all areas maximized, click the top arrow to maximize the **Settings** Area within the **Device View**. Click the bottom arrow to return the areas of the Device View to the default size. Click the bottom arrow again to maximize the **Settings** Area within the Device View.

4. Settings Area

This area is located in the tabbed menu on the right side of the screen, and is used to configure the parameters for the card. Each parameter has an appropriate control for configuring that parameter. The following features may be available:

- a drop-down box of selections;
- a slider for limited-range variables; or
- an entry field with arrows for continuous variables.

5. Button Area

The following buttons are available at the bottom of the Device View:

- **Add Frame** button — Use this button to display a new frame in the **Navigation Pane**.
- **Refresh** button — Use this button to request the latest information from the card.
- **Upload** button — Use this button to upload new software to the card.
- **Reboot** button — Use this button to instruct the card to reboot.
- **Close** button — Use this button to close the specific **Device** tab.

Device View

You can select a device from the **Navigation Pane** to display its tab in the **Device View**. Selecting a Device tab enables you to view the information on that device such as product information, monitoring options, and editable parameters.

Each Device tab is labeled with the name of the frame, the slot number that the device is installed in, the device type, and the status indicator. You can have several Device tabs open at any time in the Device View such as displayed in **Figure 11.1**.

Adding Frames to the DashBoard Lite Applet

Once the DashBoard Lite applet is running, you can select additional openGear frames to communicate with. This section outlines the connection methods for adding frames.

There are two connection methods for adding a frame:

- **Automatic Detection** — DashBoard Lite applet performs network discovery and presents a list of frames detected on your network Select a frame from the list to connect to it. It is recommended to select this method if the IP Address of your frame may change. This is the default method.
- **Advanced Connection** — Advanced Connection allows you to enter the IP Address of the device. You can also select this connection if the openGear frame you want to add is not listed in the **Automatic** dialog.

To add frames to the DashBoard Lite applet

1. Ensure the DashBoard Lite applet is running on your computer.
2. Click **Add Frame** located at the bottom of the **Navigation Pane** to display the **Add Frame** dialog. The **Automatic** tab is selected by default in the **Add Frame** dialog.
3. To add a frame using an **Automatic Detection**:
   - Select the desired frame name. You can also select more than one frame at a time.
   - Click **OK** to add the selected frame and exit the dialog. Or click **Cancel** to exit the dialog and not save any changes.

Operating Tip — *Click **Refresh** to update the list of Detected Frames in the **Automatic** tab. The refresh feature causes the DashBoard Lite applet to check the network for recently added or enabled frames.*

4. To add a frame using an **Advanced Connection**:
   - Select the **Advanced** tab from the **Add Frame** dialog.
   - Enter a name for the frame in the **Frame name** field.
   - Enter the IP Address of the frame in the **IP Address** field.
   - Enter the port of the frame in the **Port** field.
   - Click **OK** to save your changes and exit the dialog. Or click **Cancel** to exit the dialog and not save any changes.

Using the DashBoard Lite Applet

This section provides a brief summary of how to access the DashBoard Lite applet.

Password Protected Frames

A frame that is locked is represented as a node with a lock symbol in the Tree View. If you double-click a locked frame, the **Master Password** prompt displays and you must enter the current password before accessing the frame and the cards installed in it. From this prompt you can also change the password and specify access to the frame as outlined in the section "**Configuring the Master Password**" on page 2-8.

Note — *The MFC-8320-N or MFC-8310-N must be running software version 2.50 or higher.*

To change and verify device information for the MFC-8320-N

1. From the **Navigation Pane**, double-click a card indicator to display a new tab in the **Device View**.
2. Change the parameters using the controls provided in the **Settings** area.
   - The parameters available in the **Settings** area depends on the card you have selected to configure.
3. To close a tab so that it is no longer displayed in the **Device View**:
   - Right-click the tab.
   - Select close to close the selected tab. You can also click **Close** in the selected tab.
   - Select close all to close all card tabs.

Uploading Software to a Card

Use the following procedure to upload software to a card:

1. Select the **Device** tab in the **Device View** for the device you wish to upload software to.
2. In the **Device** tab, select **Upload** to display the **File Upload** dialog. Note that the **Upload** button is disabled when the **Read Only** check box is selected.
3. Navigate to the directory where the upload file is stored, and select the file to be sent.
4. From the **File Selection** dialog, click **Open**. The DashBoard Lite applet reads the file and displays a **Confirmation** dialog. This dialog displays the selected upload file name, type, size, and the file creation date.
5. From the **Confirmation** dialog, you can select from the following:
   - Click **Cancel** to cancel the upload of the file and return to the Device View.

Important — *Do not click **Cancel** unless the upload progress has stopped completely for 60 seconds or more. Cancelling an upload may leave the card in an invalid state.*

   - Click **Continue** to upload the file. While uploading, the **Uploading Progress** dialog is displayed.
6. When the upload process is complete:
   - The card reboots and may be briefly offline. However, some cards will prompt for confirmation before rebooting.
   - The **Product** tab indicates the new software information in the required fields.

Troubleshooting

This section provides additional information should you encounter problems with running or using the options in the DashBoard Lite applet.

Starting the DashBoard Lite Applet

This section provides additional information to help troubleshoot problems you may encounter when using the DashBoard Lite applet.

- **An error dialog displays stating that Java® is disabled** — Refer to your web browser help system for information on enabling Java.
- **An error dialog displays stating that the wrong version of Java is installed** — You must upgrade your Java version to Java 6 update 11 or higher. A link to the Java website is provided in the error dialog.
- **An error dialog displays stating that Java is not installed on your computer** — You must install Java 6 update 11 or higher on your computer. A link to the Java website is provided in the error dialog.
- **A Warning - Security dialog displays** — This dialog states that the application digital signature cannot be verified and prompting you to run the application. To continue loading the DashBoard Lite applet, click **Run**.

Device Tab Issues

If you are unable to make changes to the parameters of a card, or the **Upload** or **Reboot** buttons are disabled:

1. Verify that your system view is not set to Read Only as follows:
   - Right-click the **System View** option.
   - Clear the **Read Only** check box.
2. Verify that the **Edit Permission** for the card is set to **Unlocked** in the **Device** tab. This control typically appears on the **Setup** page of the Device tab.

Frame Connections

This section provides a troubleshooting list if your frame is not automatically detected by the DashBoard Lite applet when you attempt to add a frame.

1. Verify that the frame is powered on and connected to the network by navigating to the frame IP Address using your web browser.
2. Contact your IT Department to learn if the selected frame is operating inside a firewall which can cause the Automatic Connection to fail.
3. Click **Refresh** in the **Add frames** dialog and verify if the frame is listed.
4. If the frame is still not listed, you must re-connect to the frame using the Advanced Connection method as outlined in the section "**To add frames to the DashBoard Lite applet**" on page 11-5.

Troubleshooting the Software Upload Process

This section provides information to troubleshoot when the software upload process has failed.

Power or Communications Loss

If the power or communications is lost during the upload process, there will be no response from the card. It is recommended to perform the following:

1. Verify the card is powered on.
2. Verify communications by re-starting the upload process.
3. If the upload process continuously fails, re-boot the card and re-start the upload process again. Note that this is step is only recommended when other methods have failed.

Messages in the Upload Failed Dialog

You may receive a message in the **Upload failed** dialog that indicates the reason for the failure.

- **Selected file does not exist** — Click **OK** and re-start the upload process.
- **Selected file is not a valid upload file** — Verify the filename is correct. Click **OK** to re-start the upload process.
- **Selected file is rejected by the card** — Verify that you are uploading the software to the correct card. For example, you will receive this message when attempting to upload FSR-6601 software to a SRA-8601A card.
- **No response from device** — The upload failed while in progress due to a loss of power or communications. Refer to the section "**Power or Communications Loss**". This can also be caused by congestion on the internal frame communication bus. To isolate this problem, other cards in the frame can be temporarily removed for the duration of the upgrade.
- **Recovering from a failed upload** — Note that the following is only recommended when other methods have failed. To recover from a failed upload:
  - › Re-boot the card by clicking **Reboot** in the Device tab;
  - › Wait for the card to boot up; then,
  - › Re-start the file upload process.

Service Information

In This Chapter

This chapter contains the following sections:

- Troubleshooting Checklist
- Warranty and Repair Policy

Troubleshooting Checklist

Routine maintenance to this openGear product is not required. In the event of problems with your MFC-8300 Series Controller Card, the following basic troubleshooting checklist may help identify the source of the problem. If the card still does not appear to be working properly after checking all possible causes, please contact your openGear products distributor, or the Technical Support department at the numbers listed under the "**Contact Us**" section.

1. **Visual Review** — Performing a quick visual check may reveal many problems, such as connectors not properly seated or loose cables. Check the card, the frame, and any associated peripheral equipment for signs of trouble.
2. **Power Check** — Check the power indicator LED on the distribution frame front panel for the presence of power. If the power LED is not illuminated, verify that the power cable is connected to a power source and that power is available at the power main. Confirm that the power supplies are fully seated in their slots. If the power LED is still not illuminated, replace the power supply with one that is verified to work.
3. **Input Signal Status** — Verify that source equipment is operating correctly and that a valid signal is being supplied.
4. **Output Signal Path** — Verify that destination equipment is operating correctly and receiving a valid signal.
5. **Card Exchange** — Exchanging a suspect card with a card that is known to be working correctly is an efficient method for localizing problems to individual cards.

MFC-8322-S and MFC-8320-S Alarm Mute/Bootload Button

In the unlikely event of a complete card failure, you may be instructed by a Ross Technical Support specialist to perform a complete software reload on the MFC-8322-S/MFC-8320-S. The **Alarm Mute**/**Bootload** button enables emergency booting in case of flash corruption or, to recover from a failed software upgrade.

The MFC-8322-S and MFC-8320-S contain a primary software load and two backup loads. When the **Alarm Mute**/**Bootload** button is pressed and held during power-up, the card will try the two backups, in turn, instead of the primary load. If a valid backup is found, it is copied into the primary load. If neither backup is valid, then all LEDs are lit to indicate a failure.

When running from a backup copy that differs from the primary load, the **Frame Status** indicator in the **Hardware** tab of DashBoard displays "**Running a backup code**". If this message displays, Ross Video recommends performing a software upgrade to ensure that all copies remain valid.

MFC-8322-N, MFC-8320-N, and MFC-8310-N Bootload Buttons

The **Bootload** function is not implemented on the MFC-8322-N, MFC-8320-N and MFC-8310-N Network Controller Cards. However, these cards may be recoverable via their web interface as follows:

1. If the IP address of the card is known, use a web browser to try and connect to the frame by typing the IP address into the browser window as `http://xxx` where **xxx** represents the frame IP address.
2. If this is successful, this provides access to diagnostic information for troubleshooting. Contact Ross Technical Support for assistance.

Warranty and Repair Policy

The MFC-8300 Series Controller Card is warranted to be free of any defect with respect to performance, quality, reliability, and workmanship for a period of FIVE (5) years from the date of shipment from our factory. In the event that your MFC-8300 Series Controller Card proves to be defective in any way during this warranty period, Ross Video Limited reserves the right to repair or replace this piece of equipment with a unit of equal or superior performance characteristics.

Should you find that this MFC-8300 Series Controller Card has failed after your warranty period has expired, we will repair your defective product should suitable replacement components be available. You, the owner, will bear any labor and/or part costs incurred in the repair or refurbishment of said equipment beyond the FIVE (5) year warranty period.

In no event shall Ross Video Limited be liable for direct, indirect, special, incidental, or consequential damages (including loss of profits) incurred by the use of this product. Implied warranties are expressly limited to the duration of this warranty.

This MFC-8300 Series Controller Card User Manual provides all pertinent information for the safe installation and operation of your openGear Product. Ross Video policy dictates that all repairs to the MFC-8300 Series Controller Card are to be conducted only by an authorized Ross Video Limited factory representative. Therefore, any unauthorized attempt to repair this product, by anyone other than an authorized Ross Video Limited factory representative, will automatically void the warranty. Please contact Ross Video Technical Support for more information.

In Case of Problems

Should any problem arise with your MFC-8300 Series Controller Card, please contact the Ross Video Technical Support Department. (Contact information is supplied at the end of this publication.)

A Return Material Authorization number (RMA) will be issued to you, as well as specific shipping instructions, should you wish our factory to repair your MFC-8300 Series Controller Card. If required, a temporary replacement frame will be made available at a nominal charge. Any shipping costs incurred will be the responsibility of you, the customer. All products shipped to you from Ross Video Limited will be shipped collect.

The Ross Video Technical Support Department will continue to provide advice on any product manufactured by Ross Video Limited, beyond the warranty period without charge, for the life of the equipment.

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Notes:

Contact Us

Contact our friendly and professional support representatives for the following:

- Name and address of your local dealer
- Product information and pricing
- Technical support
- Upcoming trade show information

Technical Support	Telephone:	+1 613 • 652 • 4886
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